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Paul F. Titterington.
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Village Site Materials. (1938)

ILLINOIS HISTORICAL SURVEY.

The
CAHOKIA MOUND GROUP
and
ITS VILLAGE SITE MATERIALS

P. F. TITTERINGTON
ST. LOUIS, MO.
1938

Dr. P.F. Titterington of St. Louis, Missouri, has generously donated copies of his 1938 Cahokia Mounds report to the Illinois Archaeological Survey. In an effort to make archaeological information available to the public, this office will distribute copies of the report free-of-charge.

Charles J. Bareis

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The Cahokia Mound Group and Its Village Site Materials

The American bottom lies to the east of the Mississippi River from the mouth of the Missouri River south for a distance of 50 or 60 miles. It varies in width from 1 to 8 miles and the soil is rich and fertile. Just to the north of the center of this area is the Cahokia Group of Mounds. To locate the group more accurately, it lies in southeastern Madison and northeastern St. Clair Counties, Illinois, the boundary line between the 2 counties passing through the center of the group on National Highway No. 40. One author states that originally there were at least 85 mounds in an area of approximately 3,000 acres, while another says that the area covered by the group measures 1.8 miles north and south and 1.75 miles east and west, and contains 67 mounds. This difference can be explained by the fact that the area has been under cultivation for about 80 to 100 years, and that some of the smaller mounds have been completely leveled and are not visible at this time. At present there are only 15 or 20 of the larger mounds that are not under cultivation. They are either conical in shape or truncated rectangular pyramids, the latter having their sides toward the cardinal points of the compass. All of the other mounds have become so altered by the plow that their original shapes cannot be determined. There is some difference in opinion among the early authors as to whether the mounds in this group had any definite or orderly arrangement. If they had any such arrangement, it cannot be determined at this time.

Several years ago a state park of 144 acres was formed. It contains 11 of the more important mounds, including Monk's Mound. A gravel drive has been made through the park, and a small museum has been built, with the result that a large number now visit the site each year.

In 1922, Mr. George B. Higgins of St. Louis completed a survey of the group. He spent several years in his spare time in making measurements and gathering data, and then constructed a model to scale showing the size and location of the various mounds. A photograph of the Higgins' model is shown in Fig. 2.

The largest mound, and incidentally the largest earthen mound in North America, lies in the north central portion of the group. It is known as the Cahokia or Monk's Mound. The name "Cahokia" may have been taken from a small creek by the same name that ran through the group, in as much as there is no evidence that the historic tribe of Cahokias had anything to do with the building of the mounds. The name "Monk's Mound" is derived from a group of Trappists monks who lived on or near the mound from 1810 to 1813.

The mound is a truncated, rectangular pyramid, 1,080 feet long, 710 feet wide and 100 feet high, the base covering over 16 acres. It is composed of 4 distinct terraces and a ramp that leads from the lowest terrace to the original ground level (Fig. 1). The lowest terrace, which is on the south, is 500 feet east and west and 200 feet north and south. The ramp or graded approach begins just to the east of the center of this terrace and extends 80 feet due south to the ground level. The second terrace is on the west side of the mound and is so badly weathered and gullied that its size and height are difficult to ascertain. The third terrace, which is on the east side, is 97 feet above the original ground level and at one time had a small conical mound at its center. It was removed many years ago when a house was built upon the site. The fourth and highest terrace is also on the east and is 3 feet higher than the third terrace. Its area is about 1 acre.

Seven miles north of Cahokia, at Mitchell, there is a group of 11 mounds near the banks of Long Lake. The largest of these mounds was 100 paces wide on each side and 25 or 30 feet high. It was practically completely removed in about 1876 in grading for 3 railroads. Many burials were exposed which were accompanied by many fine stone implements. These have all been lost or scattered, and a large number were destroyed in a fire shortly after their discovery. At the present time there is a chert spud (Fig. 23, B) in the Missouri Historical Society collection that, according to the late Gerrard Fowke, is one of a cache of 20 from this mound. This one was sent to St. Louis for identification and, in the meantime, the other 19 were lost in the fire. There is also

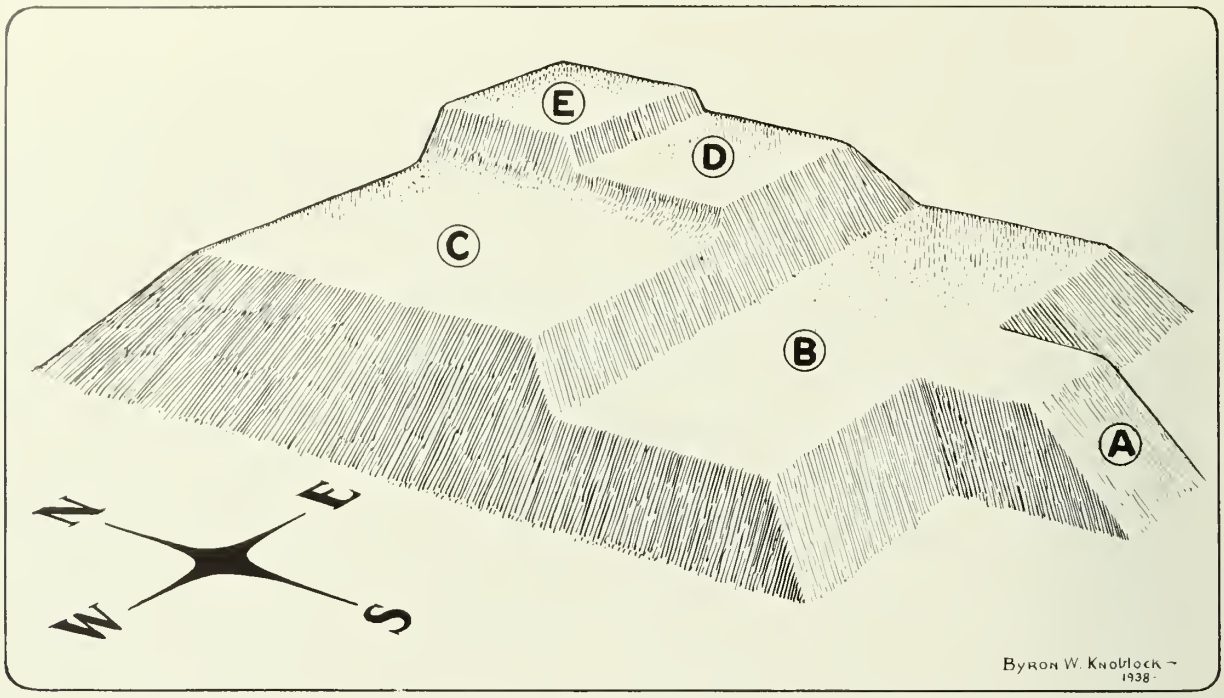

FIG. 1—Diagramatic sketch ot Monk's Mound as it is thought to have been originally: A, ramp; B, first terrace; C, second terrace; D, third terrace; E, fourth or top terrace.

a ten-inch knife in the Missouri Historical Society collection, similar to those in Fig. 24, from this same mound.

St. Louis, Missouri, lies across the Mississippi River and to the west of the Cahokia Mound Group. In the growth of the down-town district, 26 mounds were destroyed. These were first surveyed by Major Stephen H. Long before any of them had been disturbed. His report says, in part, that the mounds were situated on the second bank of the river just above the town, and consisted of one group forming a more or less rectangular enclosure, 1,463 feet north of which was a large isolated mound. It is not known just when the smaller mounds were destroyed, but the Big Mound was removed in 1869.

Conant made almost daily visits to this mound while it was being razed, and describes it very carefully. His observations indicate that a tomb 75 feet long, 8 to 12 feet wide and 8 to 10 feet high had been built. The floor had been made smooth and hard, and the walls raised with a somewhat outward slant so that the ceiling was slightly wider than the floor. The walls had been plastered with yellow clay and were solid and compact. The roof was covered with heavy timbers, and the mound erected over the whole structure. The roof had caved in long before, and the whole chamber was filled with dirt which was much looser than the walls and the mound beyond.

The burials had all been placed on the floor a few feet apart with their feet to the west. All of the burials, 20 to 30 in number, were accompanied by a very large number of disc shell or Marginella beads, but in no instance were both types of beads found with the same burial. The disc shell beads were found with most of the burials and in numbers sufficient to completely cover the individual from his thighs to his head. The Marginella beads were deposited with only 5 or 6 of the burials in the southern end of the vault, and with each there were from 4 to 6 quarts. These beads are small and average about 2,400 to the quart.

He describes other types of burials in the mound. These were found from 18 to 36 inches below the surface, and are thought to have been intrusive. Two burials of this type are described, one a male and the other a female. They had been placed close together, and with the male were 2 spirals from conch shells, 9 cylindrical shell beads, an ear-spool, an ivory spool and 2 curious copper articles. From his description of the last 3 pieces, they were in all

probability a shell ear-spool and 2 small copper plates.

To the south of Cahokia there is another small group of mounds near Dupo, and 15 miles to the east there is still another small group near Lebanon. Nothing more than the mention of these two groups is made by the previous authors, and, apparently no study has been made of them.

It would seem that there was a large central group of mounds surrounded by smaller groups on the north, south, east and west. That the several groups may be related is evidenced by the finding of similar and related artifacts at all of the sites as the result of plowing and commercial excavations. As late as 1818 a deeply worn trail could be traced from the Lebanon Group to the Cahokia Group, further suggesting the possibility of a connection.

Moorehead states that the village site is 6 miles long and varies from several hundred yards to a mile in width, the heaviest occupation occurring in about 500 acres to the south and east of Monk's Mound. In his test pits he found the camp refuse to vary from 20 inches to 4 or 5 feet in depth, and he also found refuse under several feet of new land formed by overflow.

Almost all of the material reported in this article, except that from the Powell Mound, is from the above mentioned village site. It is all from the surface, but there is no doubt that some of it was grave offerings. A large amount of horse radish is raised each year in the area and this necessitates plowing to a depth of 12 to 14 inches and more recently some of the fields have been plowed to a depth of 19 inches. It is not unusual to find that a burial has been plowed through, and the close watching of such spots is generally rewarded by the finding of a few artifacts in perfect or almost perfect condition.

In the fall of 1937, the 19-inch plowing exposed a small refuse pit which contained considerable material. The pit was dug out and objects of sandstone and shell were found. There were also about 75 potsherds. In the sandstone group there were 2 mortars, 1 saw (Fig. 25, B), 2 sharpening stones (Fig. 25 D and E) and 3 small irregular cubes suggesting unused sharpening stones. The shell group consisted of 7 hoes (Fig. 30), 54 unworked mussel shells (Fig. 31), 4 drilled conch-shell pendants (Fig. 36, A), 2 grooved conch-shell pendants (Fig. 36, D), 2 partially worked conch shells (Fig. 36, C) and 9 unworked conch shells, 2 of which are shown in (Fig. 36, B.) The conch shells were all small, the largest being 6⅜ inches long.

CHIPPED STONE OBJECTS

Under this heading are the arrowheads, drills, spades, hoes, chisels, picks, spuds and knives.

The arrowheads are by far the most numerous, there being 3,517 that can be classified and 290 that are so badly broken that their types cannot be definitely determined. They range from ½ inch to 2⅜ inches in length, averaging 1 to 1¼ inches. The triangular form predominates, there being about 85% of this type and only about 15% of other types. The chief divisions are the unnotched and the notched.

The following table shows the various types and the number of each:

Unnotched Points

Straight base, convex sides—Fig. 7, A	642
Straight base, straight sides—Fig. 7, B	353
Straight base, concave sides—Fig. 8, A	105
Concave base, convex sides—Fig. 8, C	29
Concave base, straight sides—Fig. 8, D	72
Concave base, concave sides—Fig. 8, E	45
Convex base, convex sides—Fig. 7, C	44
Convex base, straight sides—Fig. 7, D	69
Convex base, concave sides—Fig. 8, B	50
	1,409

Notched Points

Two-notched, straight base—Fig. 9	970
Two-notched, concave base—Fig. 10, A	205
Two-notched, convex base—Fig. 10, B	65
Three-notched—Fig. 11 and Fig. 12, A	306
Four-notched—Fig. 10, C	65
Five-notched—Fig. 12, B	31
Six-notched—Fig. 10, D	13
Seven-notched—Fig. 12, C	10
Nine-notched—Fig. 12, D	4
Single base notch—Fig. 15, D	5
Two-notched with one extra side notch Fig. 15, G	1
Corner-notched—Fig. 13	433
	2,108

According to this grouping, 1,409 or 40.06% are unnotched and 2,108 or 59.94% are notched. The table of the unnotched points is self explanatory, but that of the notched points will need some explanation. This group is divided into the side-notched and the corner-notched, there being 1,675 or 79.5% of the former and 433 or 20.5% of the latter. In the side-notched points the notches are sufficiently far down the side to make the head of the arrow rather bold and more or less rectangular in shape (Fig. 9). The corner-notched group contains all of the points that do not have the rectangular heads (Fig. 13). This includes the true corner-notched type and those side-notched points in which the notch comes to or almost to the corner of the base.

There are 433 points in this group, 76 of which are made of a tan to a reddish-brown chert, the various types being represented by the bottom row of Fig. 13. In this area Cahokia is the only known place where these types and materials are found.

Of the total number of 3,517 arrowheads, 356 or 10.2% have a notch at the center of the base. There are 5 that have no side notches and 351 have side notches. They are worthy of special note on account of the selection of materials and exceptional workmanship. The materials are of the finest; 63 are translucent, a few of which are made of a highly colored, almost transparent chalcedony. Only a very small percent of the other types is made of translucent material. The chipping is also of the finest—the arrowheads being thin, well made and regular; most of them are completely chipped on both sides, and only a few are made of flakes. A high percentage of these points is made of a hard, compact, white chert, suggesting material from the Crescent Quarry, St. Louis County, Missouri. Others are made of a colored chert.

The object of the notch in the base has not been determined, but the fact that the points were used is made evident by the finding of one imbedded in a human bone, a sacrum. It is a gray chert three-notched point about 1½ inches long, and was found in a burial in the Dickson Mound at Lewistown, Illinois.

Most of the 306 base-notched points have one pair of side notches and are known locally as the three-notched points. A few of them have more than one pair of notches and are known as the multiple-notched. In this latter group, one pair of notches is considerably deeper than the others and is referred to as the primary notches, while those that are more shallow are called the secondary notches. Most of the multiple-notched points appear to be three-notched points to which extra notches have been added.

In the group of points here classified, there are 31 base-notched points with one set of primary notches and one set of secondary notches, or five-notched points; there are 10 with one set of primary and two sets of secondary notches, or seven-notched points; there are 4 with one set of primary notches and three sets of secondary notches, or nine-notched points; there are 11 with one set of primary notches, in which the secondary notches are so close together that they lose their identity as such, and the points are classed as serrated.

The secondary notching is occasionally seen in those notched points in which there is no base notch. There are 65 in which there is one pair of primary and one pair of secondary notches, or four-notched points; and there are 13 in which there is one set of primary and two sets of secondary notches, or six-notched points.

In all of the multiple-notched points the secondary notches may be above or below, or above and below the primary notches.

Occasionally a point is found in which there is one more notch on one side than the other. An example of this is shown in Fig. 15, G. This could be described as a point with a pair of primary notches and a secondary notch on only one side, or as an asymmetrical three-notched point; or, this type might also be classed as an uncompleted four-notched point. In the Milwaukee Public Museum Bulletin, No. 13, Plate 49, No. 9, is illustrated a base-notched point, with one pair of primary notches and a secondary notch on only one side, that is an asymmetrical four-notched point or an uncompleted five-notched point. There is a similar point in the museum of the St. Clair County Historical Society.

There are 85 of the unnotched points and 66 of the notched, or 4% of the total that are serrated (Fig. 14). There are 12 points each of which has a highly polished strip down the center of one side (Fig. 15, C). The material is the same as that of the agricultural implements,

and the polish is the same as that seen on the bits of such implements. It suggests that they might have been made from chips from the bits of these implements. These chips could have been obtained as the result of resharpening the spades and hoes.

A comparison of the types of materials used in the manufacture of the small points with those found at Aztalan by Dr. Barrett is interesting. He found a total of 350 of the small points, 54 of which were notched and 296 of which were unnotched. We find 59.94% that are notched whereas he found only 15.4%, and he has 84.6% unnotched as against our 40.06%. The materials in his group are divided into 18 quartz, 170 quartzite and 162 chert points. In our group we have only 4 quartz points (Fig. 15, B) only 16 of quartzite (Fig. 16, A) and 3,487 of chert and chalcedony, all but about 85 of the last group being chert.

It can be seen that both the types and the materials used in the two groups are greatly out of proportion. The difference in the types is unexplained, unless it is due to the difference in the size of each series; but the difference in the materials can be explained on the basis of the large amount of quartzite found in Wisconsin.

There are 200 drills, 53 of which have definite bases. The others have been made from spicules of chert more or less square in cross-section. Some are chipped only along one edge; others on two edges, and still others on all edges (Fig. 16).

AGRICULTURAL IMPLEMENTS

There are two different kinds of these implements; the spades and the hoes, each being divided into two types. The spades are either oval (Fig. 17) or flare-bitted (Fig. 18), and the hoes are either notched (Fig. 19) or unnotched (Fig. 20). The unnotched hoes are nothing more than small spades, and the division line is arbitrary. Usually those under 8 inches long are called hoes, and those over 8 inches, spades. Spades 18 inches long are known to have been found at Cahokia, but the average length is from 9 to 12 inches. The spades are classed as oval when their width is equal to less than ½ the length, and flare-bitted when the maximum width of the bit is equal to ½ or more of the length.

Both the hoes and spades are slightly convex from front to back, with the bits well sharpened. With use the bits become polished, and with extensive use, dulled and rounded as well. They would then be resharpened, most of the flakes being taken off the back surface of the bit. It is not uncommon to find specimens demonstrating this point, and 2 of the notched hoes have been resharpened so many times that the blades are almost completely gone.

The agricultural implements are frequently found in caches. One cache of 4 spades and another of 9 notched hoes are known to have been found in the immediate vicinity of Monk's Mound. A cache of 2 oval spades (Fig. 17, A and B) was found near the Powell Mound, and one of 8 was found near the mound group 7 miles north of Cahokia, at Mitchell.

The largest cache known to have been found in the district is reported by Mr. Charles Rau in the Annual Report of the Smithsonian Institution for the year 1868. His account of the find is that early in December of that year some laborers were grading an extension of Sixth Street in East St. Louis, between Summit and St. Clair Avenues. They came upon 3 separate deposits arranged in the form of a triangle, with the edges of the deposits about one foot from each other. The first one consisted of about a bushel of small, partly pierced marine shells; the second consisted of several boulders of chert and greenstone, weighing from 15 to 30 pounds each, and many smaller fragments of chert; and the third consisted of a nest of agricultural implements. The chert tools had been placed on edge and overlapped each other so that they formed a circle. No exact count was made but the contractor thought that there were 70 to 75 pieces present; about 50 notched hoes and the balance in spades. None of them showed evidence of use as there was not the slightest polish on the cutting edges. No scientifically interested person was present, and the cache was soon scattered with no successful attempt to reassemble it.

It has been noted that in most of these caches the implements show no evidence of use. Such caches may have been stores of new implements, the wares of the manufacturer, or may have represented the wealth of an individual. Those caches in which the pieces show use could be explained as implements

stored from one planting season to the next. It is self evident in any case that those making the deposits for some reason or another never got back to them.

In this series there are 26 oval and 6 flare-bitted spades, and 21 unnotched and 10 notched hoes. The oval spades range up to 17 inches in length, and the flare-bitted specimens up to 10 inches. The unnotched hoes range up to 8 inches, and the notched ones up to 7⅜ inches (Fig. 19, A). The notched hoes are divided into two types the oval-bitted (Fig. 19, A, B and C) and the flare-bitted (Fig. 19, D). The different types of heads of the notched hoes are shown in Fig. 19. Most of them are somewhat concave on top, and a few are straight. There are 7 of the former type and 2 of the latter. Fig. 19, F, shows an oval-bitted notched hoe with a convex head, a rare type. Some of the unnotched hoes (Fig. 20, A to C) and one of the notched variety (Fig. 19, D) are made of a very hard, compact, semi-translucent material, variously colored to include milk-white, pink, red and, sometimes, purple. This material is thought to be from the novaculite quarry in Union County, Illinois. Another is made of the quartzite so commonly found in Wisconsin. Most of the unnotched hoes (Fig. 20, E to H) are made of the tan-colored chert from which the other agricultural implements are made. Some of the smaller ones appear to have been made from the bits of broken spades. Fig. 20, H illustrates one of this type. The bit is unpolished and the top is the highly polished bit portion of the spade fragment from which the hoe was made. There are several islands of polish on the front and back of the hoe that were not flaked off in revamping the piece.

CHISELS

These are rectangular pieces with rounded corners ranging from 7 to 12 inches in length (Fig. 21). Some are convex, front to back, and others are straight; both forms are rather thin. The bits show evidence of use but no polish as seen on the agricultural implements. There are 6 of these pieces in the group.

PICKS

The picks range from 4 to 10 inches in length and are about 1½ to 2 inches wide, being roughly semicircular in cross-section (Fig. 22). One end tapers to a more or less rounded point which has been ground so all evidence of chipping has been effaced, producing a very smooth surface. The other end is left rough and rather crudely finished. Sometimes the cutting edge of these pieces is so broad that it seems as though the implements should be classed as chisels rather than picks, but since they are so thick and those classed as chisels are so thin, they have been put in the former classification. There are 8 picks in this collection. On one occasion an unfinished pick was found with a flare-bitted spade and on another occasion one was found with an oval-bitted notched hoe. Both pieces were finished except for the grinding and polishing of the sharp end.

SPUDS

This is a type of implement apparently made of carefully selected material and invariably exhibiting superior workmanship. There are two forms: the flared bit (Fig. 23, A and B) and the rounded bit (Fig. 23, C and D). Fig. 23, A illustrates the flare-bitted type; the spud is $8\frac{5}{16}$ inches long and $4\frac{3}{16}$ inches across the points, and the material is a multi-colored opaque chert that has been ground and polished until nearly all of the depressions made by the flaking have been removed. The colors vary from a bluish-gray to a purple and from a light yellowish-brown to a deep reddish-brown.

Fig. 23, B shows a spud in the Missouri Historical Society Collection, the lone survivor of the cache of 20 found in the mound at Mitchell that was destroyed in 1876. It is 7⅞ inches long and white with a small amount of pink coloring. The material is probably a novaculite from Union County, Illinois.

Fig. 23, C shows the round-bitted type. The specimen is 8 inches long and 2¾ inches across the points. It is made of a light tan-colored chert with various shades of gray and purple in the upper end of the handle.

Fig. 23, D shows a specimen from a mound on Wood River, 3 miles north east of Alton, Illinois, about 15 miles northeast of Monk's Mound. It is 9⅝ inches long, made of chert, and grayish-black to a brownish-black in color. It was found in a fire pit and its original color is thought to have been white, the present discoloration being due to the fire.

These pieces are rare, but others from Cahokia are known. Moorehead reports one

in the University of Illinois Bulletin, Volume 26, Number 4, that was found near Monk's Mound in 1873 and that is now in the Peabody Museum of Harvard. There were several from Cahokia in the Payne Collection, and one in the Whelpley Collection, and a cache of 20 was found in the mound at Long Lake, 7 miles north of Cahokia.

KNIVES

Nine knives are included in this series (Fig. 24). They are very thin and of very good workmanship, and are usually made of the same material as the agricultural implements. This material is most frequently tan in color, but sometimes a light gray. It is not very compact or hard and does not show the chipping well.

Occasionally one is found that is made of a hard, compact, semi-translucent material. Fig. 24, E shows one of this type. It is 6 inches long, deep red in color with some white, and has one cutting edge highly polished.

The bases of the knives are of two types, about equally divided. They are either rounded off by the chipping (Fig. 24, C and D) or taper down to a narrow end and are snapped off obliquely (Fig. 24, A, B and E). These pieces are from 6 to 10 inches long, and a large number of fragments are found indicating their fragility and that a large number must have been in use.

SQUARE AND BUNT

Dr. Barrett reports a unique piece from Aztalan, in the form of a chipped-chert square. There is one in this series that measures 1 inch across the center from top to bottom and from side to side (Fig. 15, E). It is about ¼ of an inch thick and the sides are slightly rounded. It is made of a white chert and is not as fine a specimen as the one from Aztalan. Since it is chipped on each side and is of white chert, it is distinguished from the gun flints which are occasionally found at Cahokia. The gun flints are made from thick, dark-colored flakes chipped around the edges.

Dr. Barrett also reports 5 bunts from Aztalan, and we can produce only 1. It was made from a three-notched point and is shown in Fig. 15, F.

PECKED AND GROUND STONE OBJECTS

Under this heading are the celts, adzes, discoidals, sandstone implements, cross-hatched tablets, ear-spools and boat stones.

CELTS

There are 17 celts reported in this series. They range in size from 1½ by 1⅜ by ½ inches (Fig. 26, E) to 7 by 2⅛ by 1⅞ inches (Fig. 27, D). Nearly all of them are of the type shown in Fig. 26 and are made of granite. The one shown in Fig. 27, D is unusual in that the poll is almost circular in cross-section.

The bits are all more or less rounded and are sharp and well polished. The polls are square to rounded; none of the distinctly pointed type have been found. In all of the larger celts the upper half of the poll has been left roughened. This is thought to be intentional so that a more secure hafting could be made. Some of the smaller celts are polished all over.

A large number of fragments are found on the village sites. They are usually quite small and are not large enough to indicate the type or size of the original piece.

There is a small mound about ¼ of a mile north of Monk's Mound from which a large number of unfinished celts were taken about 30 or 40 years ago. All were pecked out into a fairly good shape except for some on which the bit had not been formed. The largest weighed about 25 pounds. The specimen shown in Fig. 26, A is a large unfinished celt of this type, but it is not from the mound mentioned above.

No grooved axes are definitely known to have been found within the mound group proper, but several are known from the bluffs about a mile to the east.

ADZES

These are quite similar to the celts but have one side somewhat flattened. The bits are slightly curved with the convexity of the curve away from the flat side. Fig. 27, A, B and C shows 3 of these pieces. The largest is 8⅞ by 2⅜ by 1¼ inches with a somewhat pointed poll. The bit is slightly narrower than the widest portion of the piece, but in the other two the bits are definitely the widest part.

DISCOIDALS

This type of object is represented by 4 complete and 4 fragmentary specimens. There are 6 made of quartz and 2 of granite. All are of the same type; they are relatively thin with the concavities fairly deep and extending all of the

way out to the edge of the piece. Fig. 28, A, B and C shows 3 complete specimens, the largest being of quartz, 2⅝ inches in diameter and 1 inch thick. Their use is problematical.

A cache of 6 discoidals of this type is reported to have been found 25 or 30 years ago about 300 yards west of Monk's Mound. They were found at a depth of 18 inches while digging a post hole.

MORTARS OR GRINDING STONES

There are only 2 pieces of this type to be reported. Both were plowed out of a refuse pit in the fall of 1937. One is made of a reddish-brown, fine-grained sandstone, roughly circular in shape, 8½ inches in diameter, 2 inches thick on one side and 3 inches thick on the opposite side. There is a shallow depression on each side that extends out to the edge of the piece in all directions. The other is made of a yellow sandstone and is roughly triangular in shape, being 9½ inches in its greatest diameter and averaging 2 inches in thickness. It also has shallow depressions, one on each side, but these are confined more to the central portion of the piece and do not involve the corners.

Dr. Barrett reports 5 similar pieces from Aztalan. He is of the opinion that they were of common usage and accounts for their scarcity in collections by the fact that they were rather large and crude and are not ideal specimens for the collector. When the land was first plowed it is possible that a large number of them were brought to the surface and recognized only as so many stones to be hauled off the fields on account of their interference with working the soil. In this way he accounts for their scarcity in the village sites at this time. He also found a few hand stones that could have been used as mullers in the grinding of corn. Such stones are probably present at Cahokia but have not been recognized, and we have none to report.

SHARPENING STONES

These artifacts are quite common. They are irregular cubes or rectangular pieces of a rather fine-grained sandstone. The largest are not over 4 inches long and about half as wide. Most of them are irregular cubes 1 to 3 inches in diameter. They contain fairly deep grooves on one or more sides, and were probably used in sharpening the bone and antler implements (Fig. 25, bottom row).

SANDSTONE SAWS

These pieces have a sharp straight edge that could have been readily used for the sawing of bone and shell. Two are illustrated in Fig. 25, A and B. A of this figure is a half oval in shape, 7¾ inches long, 2⅞ inches wide and ⅜ of an inch thick at the back. It gradually tapers from the back to a thin straight edge that could have been used as a saw. B is a thin piece of sandstone with a straight sharp edge· the other three sides show no definite working, and one flat surface near the end has been used as a sharpening stone.

CROSS-HATCHED TABLETS

Pieces of this type are rare and are usually made of sandstone. A few are found that are made of a very light-weight cinder-like material. They are either oval in outline or rectangular with rounded corners. The cross hatching is either on one or both sides and in the form of small squares or diamonds. Fig. 28, E shows a specimen made of the cinder-like material, 3¾ inches long and 2⅞ inches wide with square cross-hatching on only one side. Their use is not known.

EAR-SPOOLS

These objects have not been found in abundance. In this series there is a fragment of a bone piece and an unfinished fine-grained sandstone piece that may be unfinished ear-spools. Fig. 38, G shows a fragmentary one made of bone that was found at Mitchell when the railroad companies tore down the large mound in 1876. It is $1\frac{3}{16}$ inches in diameter; the flange on the front is ⅜ of an inch wide and that on the back ¼ of an inch. Its maximum thickness is ⅜ of an inch and the hole through the center is $\frac{9}{16}$ of an inch in diameter. Fig. 29, J is of a somewhat different type than the one just described. It is made of steatite and is 1⅝ inches in diameter and ½ of an inch thick. The flanges are the same width on each side, varying from $\frac{3}{16}$ to ¼ of an inch. The hole through the center is not true, but averages $1\frac{3}{16}$ inches in diameter. The inner surface of the hole and the depression between the two flanges are not polished, whereas the flat surface of each flange is highly polished.

It is reported that 2 large stone ear-spools were found by the University of Illinois in their work in 1931.

BOAT STONES

Only 3 boat stones from Cahokia are known. None of the earlier writers report them and it is probable that the Cahokia people did not use them. The heart of the boat-stone area is in the south, and it may be that this district is the northern limit of the area, in as much as an occasional boat is found here.

Fig. 29, A, B and C show the 3 specimens all of which were found on a ridge about 1½ miles long that extends due west from Monk's Mound. A is made of limestone and measures 2½ inches long, 1¼ inches wide and $\frac{9}{16}$ of an inch high. It has a hole of pin-point size drilled ¾ of an inch from one end, and a small hole started ¾ of an inch from the other end. It has a shallow concavity on the flat surface. B is made of a brown quartz and measures 3⅞ inches long, 1⅞ inches wide and 1⅛ inches high. It is not drilled and has a deep concavity. C is made of a stone quite similar to hematite in appearance and color but much lighter in weight. It is 4½ inches long, 1¼ inches wide and ½ of an inch high. It is drilled with a large tapering hole at each end and has a concavity of moderate depth.

OBJECTS OF SHELL

Both fresh-water and salt-water shells were used. Mussel shells were obtained from the bodies of fresh water nearby, and were used as hoes and, to a lesser extent, in making ornaments. Salt-water shells were obtained from the Gulf of Mexico and were used mostly in the manufacture of ornaments.

SHELL HOES

These pieces are made from the large, heavy-ribbed mussel shells known locally as washboard shells. Fragments of the hoes are more or less common on the village sites, and there are 8 fairly complete specimens in this series. Of these, 7 (Fig. 30) were found together in a refuse pit, and the eighth was found in the loose dirt scattered from the Powell Mound.

Each is perforated by an irregular, circular hole in the body near the larger end, varying from ⅝ of an inch to 1 inch in diameter, and also has a shallow notch near the hinge. The largest piece is 5⅞ inches long and 4 inches wide, and the smallest is 3⅝ inches by 3¾ inches.

The method of hafting is problematical but they were no doubt attached to a wooden handle similar to our hoes of today. The hole and the notch are thought to have been used in making the attachment of the handle possible. A hoe of this type with its original wooden handle was found in a rock shelter in Benton County, Arkansas, by the Heye Foundation. The wooden part was straight with a cylindrical enlargement at one end and there was a deep notch cut across the cylinder at right angles to the long diameter of the handle. The base of the hoe was put in the notch and lashed in place with leather thongs through the hole.

SHELL ORNAMENTS

The bead is by far the most common article of this type, the disc form occurring many more times than any other. In October of 1937, while walking over one of the village sites about one mile west of Monk's Mound, 3 disc beads were seen in a small area about 5 inches in diameter, and about a foot away was a fourth bead. More beads were discovered immediately under the group of three, and when a depth of about 10 inches had been reached, a large mass of beads 15 inches in diameter and 3 inches thick was found. Due to the heavy fall rains there was deep mud under the dried surface of the ground and it was impossible to work the beads out in place, but it could easily be determined that they had been strung without regard to size.

They were made of both the fresh-water mussel shells and the Gulf conch shells, some of the beads showing identifiable parts of the original shells. They range in size from ¼ of an inch to 1⅜ inches in diameter and vary in thickness from $\frac{1}{16}$ to $\frac{5}{16}$ of an inch. There were 1,960 beads in the cache. They were not associated with a burial, and no other artifacts were found with them. There were 2 bone beads in the group.

They have been classified as follows: 1,084 round or true disc beads (Fig. 32); 290 made from the shoulder of the conch shell (Fig. 33); 386 unfinished (Fig. 34); 2 bone; and 198 badly broken, unclassified beads.

Those classified as unfinished are of interest in that they are irregular pieces of shell roughly triangular to square in shape with a hole more or less centrally placed. Some show that the original shell had been cut about ⅓ of the

way through, and then the piece to be made into a bead broken out. The line of fracture did not always follow the groove that had been made (Fig. 34, the last specimen in the middle row).

From the study of the specimens in this cache, it seems probable that a shell which was to be made into beads was marked off and then deep grooves cut in the surface, probably by means of the sandstone saws or other sharp-edged implements. They were then broken up along lines following the grooves as nearly as possible. The individual pieces were drilled and the shaping was done after the drilling. A small flint drill apparently was used to make the holes, most of the beads having been drilled from only one side. However, there are quite a few of the thicker ones that were drilled from both sides.

Another type of shell bead that is occasionally found is barrel-shaped. One is illustrated in Fig. 35, D. It is $\frac{9}{16}$ of an inch long and $\frac{5}{16}$ of an inch in diameter, and has been drilled from each end with a conical hole. The apices of the two cones meet at the center forming an opening about $\frac{1}{16}$ of an inch in diameter. Fig. 38, J shows a similar bead of bone.

The beads from the Powell Mound were of several types, cylindrical, barrel-shaped, thick disc, almost spherical and the marine olivella and marginella shells. One group of 24 cylindrical and barrel-shaped beads was found. There were 6 of the former and 18 of the latter. One of the cylindrical beads (Fig. 35, G) is 2 inches long and $\frac{9}{16}$ of an inch wide, and one of the barrel-shaped, (Fig. 35, H) is 1¾ inches long and $\frac{13}{16}$ of an inch in diameter. Each has been drilled from each end with a conical hole. There was another group of 31 beads that were almost spherical in shape. The largest (Fig. 35, F) measures 1⅛ inches by ¾ of an inch. It has been drilled with a hole of almost uniform diameter. There are 69 beads in a third group which were thick discs. The largest (Fig. 35, E) is $\frac{13}{16}$ by $\frac{7}{16}$ of an inch in dimensions and has been drilled from each side. All of the beads in these three groups are made from the columella of the conch shell. Thousands of the marginella beads were found (Figs. 50 and 51). These vary in length from ⅜ of an inch to, rarely, ⅝ of an inch, and all have been ground near the shoulder to make a hole for attachment.

Beads of other materials are sometimes found. Fig. 35, A is a split canine tooth of a bear, and B of this same figure shows two globular beads made of felspar. A burial was plowed through two years ago; and the two felspar beads, 22 disc shell beads closely averaging ¼ of an inch in diameter, a three-notched arrowhead and a twelve-inch oval-bitted spade have been picked up in this spot to date.

PENDANTS

All of the pieces of this type in the series are made of the small Gulf conch shells. There are 6 that have a hole drilled through the smaller end of the shell (Fig. 36, A) and 2 that are grooved (Fig. 36, D), one of the latter having a second groove about the middle of the shell (Fig. 36, D, right). Most of them have all of the sharp projections on the shoulders of the shell ground off smooth. Some show only a moderate grinding of projections, and others show no working other than the hole for suspension. The 8 specimens on hand vary from 3¼ to 5⅝ inches in length.

There is a type of specimen that is difficult to classify (Fig. 37). It is made of the columella of the conch shell, and some specimens show definite signs of having been worked (Fig. 37, 1, 4 and 6), showing notches, while others could be spicules of badly disintegrated articles made from the columella of the conch shell. They are described here under pendants because Dr. Barrett, at Aztalan, found some of them perforated and grooved for suspension. None worked in this manner from Cahokia have been called to our attention.

OBJECTS OF BONE AND ANTLER

Animal bones were used for the making of implements and ornaments. The bone awl is the most common of these articles. The majority are split sections of the shafts of long bones that have been sharpened on one end (Fig. 38, E and F). There are 7 complete specimens of this type in the series. The specimens shown in Fig. 38, A and B are made from the cannon-bone of the deer; that in Fig. 38, C, from the tibia of the deer; and that in Fig. 38, D, from the leg bone of the wild turkey. In all of these, one end of the bone has been left unaltered, probably to be used as a handle. Fig. 38, L shows a spine from the fin of a large fish. It required very

little, if any work, to convert it into a perforator, but the point shows definite evidence of use. Fig. 38, H shows what appears to be an unfinished disc bead. Two finished beads of this type were found in the cache reported under the shell disc beads. Fig. 38, K illustrates a perforated toe bone of the deer, used for decoration or in certain games. The perforation is in the lower end of the piece in the direction of the long axis.

Four fragmentary antler arrow tips have been found, the most complete specimen of which is shown in Fig. 38, M.

COPPER, HEMATITE AND GALENA

In all of Moorehead's explorations at Cahokia no tools or ornaments made of copper were found. In the summer of 1922 a snake about 4 inches long made of sheet copper was found in the Round Top Mound. Fig. 29, E and F shows the only two copper pieces in this collection. E is a very thin celt 2⅛ inches long, and F is a rolled copper bead $\frac{3}{16}$ of an inch long.

The celt has been examined by Dr. H. M. Sayre of the Montana School of Mines, and he reports that it is made of copper from the lake region and was worked cold or at a very slight heat.

Two copper covered wooden spindles from the Powell Mound are shown in Fig. 49 and are described on page 15.

Hematite is also quite rare at Cahokia. Fig. 29, D shows a hematite paint stone 2¾ inches long. It has been broken in two, and one portion of it was found near the base of the Powell Mound one year, while the other portion was found near by the next year. Fig. 29, G shows a hematite adz 1½ inches long and 1¼ inches wide. It is made of a steel-gray, hard hematite, highly polished, and with a slight curve to the cutting edge. A small, very well made hematite celt from Cahokia is known to have been found. Small pieces of hematite in the forms of red and yellow ocher are not uncommon. They are thought to have been used as paint.

Numerous pieces of galena are found in the forms shown in Fig. 29, H. No artifacts of this material have been reported, and it is suggested that this also may have been used as paint.

POTTERY

The art of making pottery at Cahokia was very highly developed, and there was a large amount of it in use. Large numbers of sherds can still be picked up on the village site, and they indicate many different forms of vessels, both plain and decorated. Most of the tempering is shell; however, a moderate number of grit-tempered sherds are found. There are also cell-tempered sherds, but since by some authorities they are considered to represent a disintegrated shell tempering they will be so considered here. The most characteristic shape of the vessels is circular in cross-section with the height usually less than the width and with a rounded base. In some, the shoulder is rounded and in others it forms a sharp angle. The shoulders slope inward to form the neck, and the rim is usually short and flaring. There are 2 and sometimes 4 loop handles extending from the rim to the shoulder. Some are bowl-shaped with slightly contracting walls and no neck, and these quite often have handles representing the head (Fig. 41, group A) and tail of some animal or bird, placed opposite each other on the rim (Fig. 40, A).

One form that appears rather commonly is the so-called "beanpot" (Figs. 40, B; 43). It is a more or less straight-walled beaker-shaped vessel with a straight handle extending out from the side wall. The handle may be attached to the rim (Fig. 40, B) or to the side wall anywhere along the upper half of the vessel, and was quite often attached by the riveting process. A hole was made through the side of the vessel; then the end of the handle to be attached was placed through the hole and smoothed out on the inner side of the vessel. The handles are usually 2 to 4 inches in length, circular or semi-circular in cross-section and pointed at the end (Fig. 41, group D). A few have been found that represent the human forearm and closed fist (Fig. 41, group B).

There are many specialized forms, and flat dish-like vessels are not uncommon. Fig. 40, C shows a small owl-effigy bowl with the opening in the abdomen. There are also handled covers for the very large vessels. Two reconstructed covers are shown in Fig. 43. They are in the bottom row on each side of the group of spades.

Some of the pottery is very thin and hard, usually black in color, of a much better texture than the average, and appears to have been polished (Figs. 39; 40, H; and 43, the 5 central pieces in the top row and the 3 central pieces in the second row). Some of it is painted either on the inside or the outside, and sometimes both. It is very seldom that more than one color has been used on the same piece.

Decorations are quite common, and they usually occur on the area between the shoulder and the neck of the bowls, or on the outer wall of the "beanpots." They are in the form of straight or curved lines and are geometric in design, the scroll being quite common. The lines appear to have been incised with a sharp point (Fig. 42, E, F and G), or, in instances, they appear to have been made with a dull point (Fig. 42, B), and are wide and smooth, suggesting modeling. G of this same figure shows a thin, grayish-black, shell-tempered ware, and the incised design is suggestive of the eye portion of the figure on the thin copper plaques from the south. Occasionally punctate patterns are seen (Fig. 42, D). This form of design occurs most commonly on the red ware. The specimens shown in D and F of this figure are a bright red on both the outer and inner surfaces.

Fig. 39 is of a handled bowl of the thin, black ware, restored by the Milwaukee Public Museum. It was found at a depth of 3½ feet in making a cut for the widening of U. S. Highway No. 40, in 1935. Its maximum diameter is 10⅜ inches; inner rim diameter, $8\frac{1}{16}$ inches; and the height, $3\frac{15}{16}$ inches. The tail or handle is $3\frac{7}{16}$ inches long and $2\frac{9}{16}$ inches wide.

Quite a few sherds from pots similar to that shown in Fig. 40, G have been picked up. This is a shell-tempered, cord-imprinted vessel in the Missouri Historical Society collection, originally in the Patrick collection, and was found in St. Clair County. It is 8½ inches high, 11½ inches across the shoulders, 9⅜ inches across the rim, and has an opening 7½ inches in diameter. In most of the sherds of this type the cord imprinting extends up to the base of the neck (Fig. 42, A).

Handles and lugs are of rather common occurrence. They are round or elliptical in cross-section and frequently extend above the rim of the vessel (Fig. 40, D). The handle on Fig. 40, F has two small knob-like projections on the rim at the top and a deep groove down the center. These are decorative features. The straight handles have been described under "beanpots."

Lugs are outward projections on the rim, as illustrated in Fig. 40, E. In this specimen there is a double lug on each side, seen best on the right side because those on the left have been damaged. The lugs vary from small to large and are either plain or decorated. The effigy head of animals and birds seen on some of the bowls could be classed as decorated lugs. Sometimes the large heads are hollow and contain several small pellets of pottery or stone so that they will rattle when shaken.

Pottery trowels, or shapers, are not uncommonly found. They are usually mushroom-shaped and made of a tan-colored clay. The broad bottom surface is somewhat convex and very smooth. The last specimen in the top row of Fig. 43 is of this type. A few of the type shown in Fig. 41, E have been found. This piece is shaped like a bell pestle. It is made of a dark shell-tempered clay and the bottom surface is very highly polished.

Fig. 42, C is a pottery disc perforated at the center, made of a grit-tempered cord imprinted ware. Discs of this type are in character with the Monk's Mound culture, but all of the others so far seen have been made of a shell-tempered ware. Moorehead reports several of these; their use is not known.

Pottery ornaments for personal adornment are rare but are sometimes found. Fig. 35, C shows a bead in the effigy of an owl. It is made of black pottery and is 1⅛ inches high, with incised lines to represent the wing on each side of the body, and with a hole drilled completely through the head, the openings of the hole representing the eyes. Three other pieces of this type are on record; one of pottery and two of stone. The one of pottery is considerably the largest, and the two of stone are about the same size, the difference being that the wings of all three are in relief instead of being incised.

Most of the pipes found are made of pottery. Fig. 28, D shows one that was found near Monk's Mound in 1910. It is made of a black ware, and is 3⅞ inches long and 3⅛ inches high. The next to last specimen in the top row of Fig. 43 shows a specimen similar to the one described above, but somewhat larger and with a more flaring bowl.

Figs. 44 and 45 show two pottery objects for which the use is unknown. These pieces are made of a poorly puddled, crumbly ware that contains considerable coarse grit tempering. They were apparently heavily fired, because the external surfaces are so hard that it is difficult to scratch them with the thumb nail, while on the broken surfaces fairly large granules can be broken out by moderate pressure of the ball of the thumb. There are 9 fragmentary specimens on hand, the outer surfaces of 7 showing a coarse cord imprinting, and the outer surfaces of 2, a rather fine cord imprinting. All 9 are from within the Cahokia Mound Group.

There are two types represented and they have several features in common. Both somewhat resemble a tree stump with a flaring top, and with 2 foot-like projections suggesting the above-ground portions of the larger roots. These 2 foot-like projections are placed almost at right angles to each other so that about ¾ of the base is roughly circular in outline. Neither of the two more complete specimens have both of the feet, but if both feet, were present, it is thought that the object would stand in the upright position without additional support. Each type has a deep, inverted conical cavity, the base of the cone being at the top and the apex extending down into the body for a distance equal to ½ or ⅔ of the entire height of the object.

The difference between the two types relates to the nature of a hole in the lower portion of the pieces. In the first type (Fig. 44) the hole is a perpendicular downward extension of the apex of the conical cavity. It emerges on the bottom of the piece in a circular opening. In the second type (Fig. 45) the hole lies in the horizontal plane about 1 inch above the bottom of the piece, and has no connections whatever with the conical cavity above. The hole begins in the angle between the two feet and extends straight through the base, and emerges on the opposite side.

Two specimens of each type can be identified, and the other 5 fragments are represented by three foot specimens and two body specimens, insufficient for typing. Five other fragmentary specimens have been seen. Four are from the southern portion of, or just south of the Cahokia Mound Group proper, and the fifth was found in the summer of 1937 at a village site in the Pierre Marquette State Park, Jersey County, Illinois, by Mr. John Rinaldo of the University of Chicago.

THE RAZING OF THE POWELL MOUND

This mound, No. 46 in the Moorehead Classification, was 310 feet long, 180 feet wide and 40 feet high. It was the most symmetrical mound in the group and was shaped like a large hay stack (Fig. 46).

In December of 1930 and January of 1931, all but about 5 feet of its base was removed, the object being to fill in an area of low ground 200 to 400 yards to the northwest. By doing this, the owners were able to put their whole tract of about 50 acres under cultivation.

It is regrettable that information from this mound was almost completely lost to science. This loss was due to lack of funds by the scientific institutions, and to the lack of public interest. For a period of several years the Powell brothers had a standing offer of $3,000 and 3 year's time open to any institution that cared to study the mound; the only conditional requirement was that the dirt removed be placed in the area of low ground—200 to 400 yards away. The undertaking was too big for those scientifically interested, even with the financial assistance offered by the owners. It seems that the state wanted to buy the mound with a 50-foot margin around the base and a road leading to the main highway. This proposition did not appeal to the Powells because it would have taken a mushroom-shaped piece out of one end of their tract of land. They offered to sell their whole farm, but this in turn did not appeal to the state. With this deadlock, there were rumors of condemnation proceedings which precipitated the removal of the mound.

Work was started on the north side of the mound with a large steam shovel, which was hidden from the view of the highway by the large size of the mound. It was 8 days before the public was aware that the mound was being taken down. At this time the Powells gave permission for a scientific man to watch the proceedings, and to do what excavating he could as long as he did not interfere with the contractor.

This work was under the supervision of the Archaeological Department of the University of Illinois, but did not get under way until the razing had been in progress for a total of 16 days.

In talking to the workmen and several visitors who had been present during this 16-day period, several things of interest were reported.

Soon after the contractor started, a black humus line, approximately 4 inches thick, was seen near the base. It gradually rose to about the middle of the mound and kept this level for the greater part of the distance of the long axis, when it began to descend again toward the base. It was also seen to slope toward the base at the sides, giving the impression of an original flat-top mound which had been covered over by a secondary mound (Fig. 47).

Near the west end of the mound, on top of the black humus line, considerable burnt clay of reddish color was seen. Nothing more than its presence was noted by the workmen. This may have been a fire place, or the clay surfacing of a burnt house.

At about the junction of the west and middle thirds of the mound, on the humus line, many fragments of bone, thousands of Marginella shells and an occasional bead made from the columella of the conch shell began to appear. Some of the bone fragments were discolored, which was thought to be due to a chemical change rather than to fire. The area occupied by this group burial extended 30 feet across the vertical face of the mound. As the digging progressed, the ends changed their course very little and extended back in the direction of the long axis for about 20 feet, giving the impression that the burial was rectangular in shape. Nothing from this burial was saved.

A short distance west of the center of the mound, about 3 feet below the humus line of the flat-top mound, about 18 inches of a cedar post was seen, approximately 6 inches in diameter. The upper end was freshly splintered and the lower end extended down into the dirt and was not visible. The specimen was not recovered.

At about the junction of the middle and eastern thirds of the mound, another one of the rectangular group burials was found. The west side of it was torn out by the shovel, and the scientific work done was in about the eastern third of it.

Through the courtesy of the contractor, several of us had the opportunity of studying rather closely the vertical face of the mound through this second group burial. He put us into the scoop of the shovel and raised us up to the level of the burial. Our impression of what we saw was that cedar sticks, about 1 inch in diameter, had been laid down parallel to each other about 3 feet apart on the top of the humus line. These had been covered over with layers of bark and the burials placed on top of the bark. The burials were covered by from 1 to 5 layers of Marginella shells. These shells were in such definite rows, and covered areas sufficient in size, to suggest that they had been attached to garments or robes. Over the top layer of shells was a layer of bark, and above this was the secondary mound.

A cross-section of the whole face of the mound would be as follows: 20 feet of dirt of the primary mound including a 4-inch humus line on top; a row of cedar sticks on the humus line; a layer of bark over the cedar sticks; bones on the layer of bark; the bones covered by 1 to 5 layers of Marginella shells; the shells covered by a layer of bark; and this layer of bark covered by 20 feet of dirt of the secondary mound. The burial, including the top and bottom layers of bark, was 2 inches thick and, as can be seen, was sandwiched between 20 feet of dirt above and below. Fig. 49 shows a reconstruction of the burial in cross-section as described. It does not show the cedar sticks.

Fig. 50 shows the preservation of a specimen of the top layer of bark and the top layer of Marginella shells as seen from below. It was frozen to a piece of dirt weighing about 50 pounds, and was brought in and allowed to thaw out and dry. In so doing, it cracked through the center, and a few shells in this area have been replaced. Note the regularity of the rows of shells and the uniformity of position of the shells in each row. Each shell has been perforated for attachment.

Fig. 51 shows a reconstruction looking down upon the top of the rows of shells.

During the removal of the mound, 13 burials, extended in the flesh and thought to be intrusive, were found. There were no artifacts with them and they did not seem to be

connected with the group burials. One of the burials was in the west end and another in the east end, both near the base of the secondary mound. There were 5 in the south side and 6 in the north side. All were at about the level of the humus line, but in the secondary mound.

Numerous artifacts were picked up during and after the razing. These consisted mostly of Marginella beads, beads made from the columella of the conch shell, pendants made from the entire small conch shells and numerous potsherds. These sherds are thought to have been scattered in the mound dirt rather than to have come from broken pots with the burials. Two interesting artifacts from the eastern group burial were picked up by one of the workmen. They were 2 spindle-shaped objects made of cedar (Fig. 48). Each cone of the spindle had been covered by a thin sheet of copper, and one spindle had a leather thong tied in a double knot around the neck. The leather had been preserved by the copper. Each piece was 2⅞ inches long and 1⅛ inches wide at its greatest diameter.

Some of the beads recovered are shown in Fig. 35, E to H, inclusive. Fig. 35, E is of a thick disc bead, while the one shown in F of the same figure is almost spherical. Fig. 35, G and H shows beads from the same necklace; one is a barrel-shaped, cylindrical bead and the other is a true cylindrical bead. Fig. 35, J and K shows 2 of a group of 90 olivella beads from a burial found under Mound 85, which was excavated by the University of Illinois in the summer of 1931. This mound lay just a very short distance south of the Powell Mound.

In the early spring of 1931, the base of the Powell Mound was trenched by the University of Chicago and the University of Illinois, with the cooperation of the Milwaukee Public Museum. During the summer, the University of Illinois, while excavating Mound 85, found a large refuse pit under the mound.

In Fig. 43, the 5 central pots in the top row, the 3 central pots in the middle row and the 2 large covers in the bottom row are specimens restored from some of the sherds from this pit. They are the hard, thin, polished ware typical of the "Old Village" culture. The other pots shown in this figure are types found at Cahokia, but are of a much coarser ware and are ascribed to the "Beanpot" culture. The spades shown in the center of the bottom row were found close to a burial at the edge of Mound 85.

Practically all of the reconstruction work done on this group of pots was by Mr. Peter Stewart, formerly with the Department of Anthropology of the University of Illinois.

CONCLUSIONS

It is known that more than one cultural manifestation is present at Cahokia. Since nearly all of the material here reported is from the surface of the village site, it is a mixture of all of the cultures present, and presents a difficult problem in placing the various artifacts in their proper cultures. This can be done only in part.

Dr. A. R. Kelly has used the name "Old Village" for one of the cultures. This is a tentative name, and the manifestation is more generally known as the Monk's Mound Aspect of the Middle Phase, Mississippi Pattern.

Certain artifacts and traits have been found to have been associated definitely with the Monk's Mound or "Old Village" culture. These are the platform mounds, split-bone and polished bone awl, ear-spools, thin polished pottery, three-notched triangular points, chert spades, mushroom-shaped pottery trowels or shapers and burials extended in the flesh.

Dr. Kelly gave the name "Beanpot" to the culture having the thicker and coarser types of pottery and having the "beanpot" as a rather common type of vessel. It is thought to be later than the "Old Village" culture, but still a branch of the Middle Mississippi Phase. Whether they built the round-topped mounds and the conical mounds superimposed on the platform mounds remains to be determined. These mounds may have been built by some other cultural group not yet recognized.

It is possible that both the "Old Village" and the "Beanpot" cultures used the disc shell beads, conch shells, triangular points—including the two-notched types, and the celts or ungrooved axes. Which one used the notched hoes and the polished spuds is not known. In as much as neither of these are found at Aztalan, it seems probable that they were not used by the "Old Village" culture, since Aztalan parallels the "Old Village" manifestation quite closely. When it is possible to place

a crew of scientific men at Cahokia for a sufficient length of time to study the area thoroughly, the artifacts herein described can be more properly placed in regard to their cultures.

My thanks and appreciation are expressed to the Powell, Rechlein, Sherman, and Ramey families for the materials which they have made available and for permission to go over the village sites on their farms each year; to Mr. William Norton, curator of the Museum, and Mrs. Norton for their cooperation; to Messrs. Will L. Hall, L. R. Daerr, Joe Walta, O. A. Schneider, Charles Simpson, Joe Pullin, George B. Higgins, the late M. A. Wertheimer and The Missouri Historical Society for materials which they have made available; to the Milwaukee Public Museum, the University of Illinois and Mr. J. A. Meyer for the use of photographs; to Byron Knoblock for drawings and to W. C. McKern for editorial suggestions.

The reader is referred to Dr. S. A. Barrett's bulletin on "Ancient Aztalan" and also to that of Dr. W. K. Moorehead on "The Cahokia Mounds" for further descriptions and photographs of pottery types and decorations.

BIBLIOGRAPHY

1. Barrett, Dr. S. A., **Ancient Aztalan.** Milwaukee Public Museum Bulletin, No. 13, 1933.
2. Bushnell, D. I., Jr., **The Cahokia and Surrounding Mound Groups.** Peabody Museum, 1904.
3. Conant, A. J., **Foot Prints of Vanished Races.** 1879.
4. Fowke, Gerard, **Antiquities of Central and Southeastern Missouri.** Bureau of American Ethnology, Bulletin No. 37, 1910.
5. McAdams, William, **Antiquities of Cahokia; The Ancient Mounds of Illinois,** 1881; **Records of Ancient Races,** 1887.
6. McKern, W. C., **Wisconsin Pottery.** American Anthropologist, Volume 33.
7. Moorehead, W. K., **The Cahokia Mounds.** University of Illinois Bulletin, Vol. 26, No. 4.
8. Rau, Charles, **A Deposit of Agricultural Flint Implements.** Annual Report, Smithsonian Institution, 1868.
9. Thomas, Cyrus, **Mound Report.** 12th Annual Report, Bureau of American Ethnology, 1894.

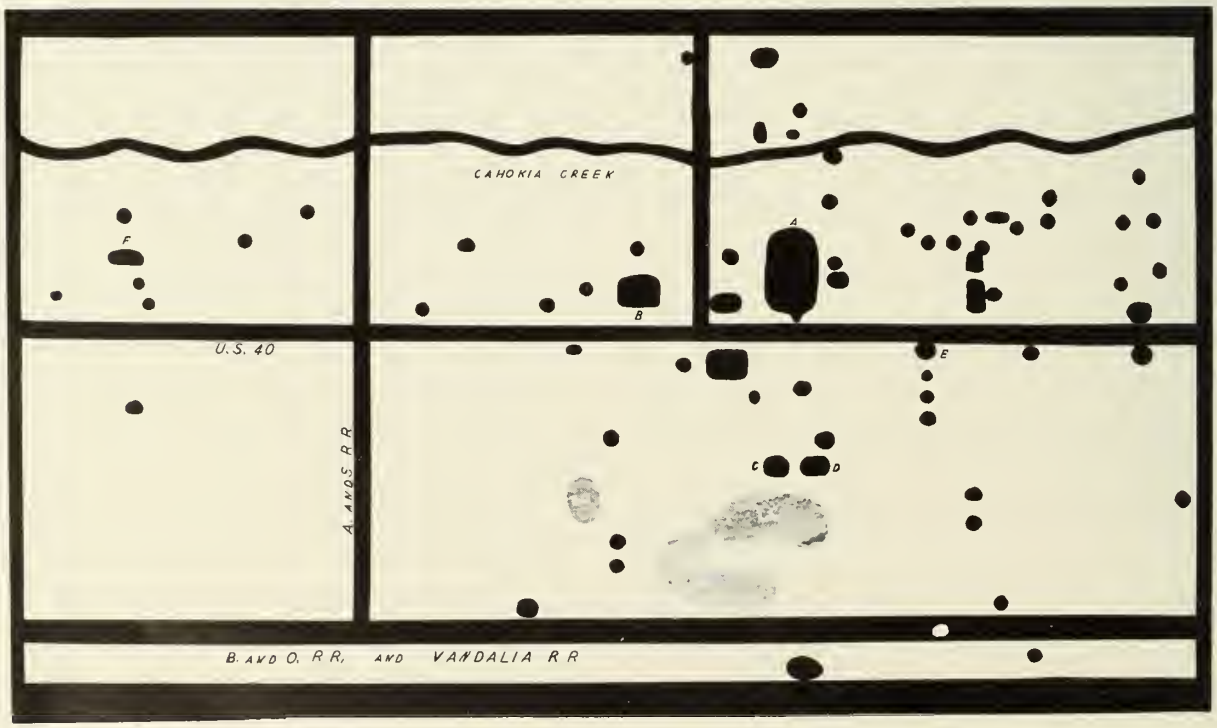

FIG. 2—Higgins' model of the Cahokia Mound Group; A, Monk's Mound; B, Merrill Mound; C, Round-Top Mound; D, Fox Mound; E, one of the smaller mounds; F, Powell Mound.

FIG. 3—Monk's Mound from the northeast, March, 1938.

FIG. 5—One of the smaller mounds.

FIG. 4—Fox Mound (left); Round-Top Mound (right).

FIG. 6—Merrill Mound; Monk's Mound in the distance to the left.

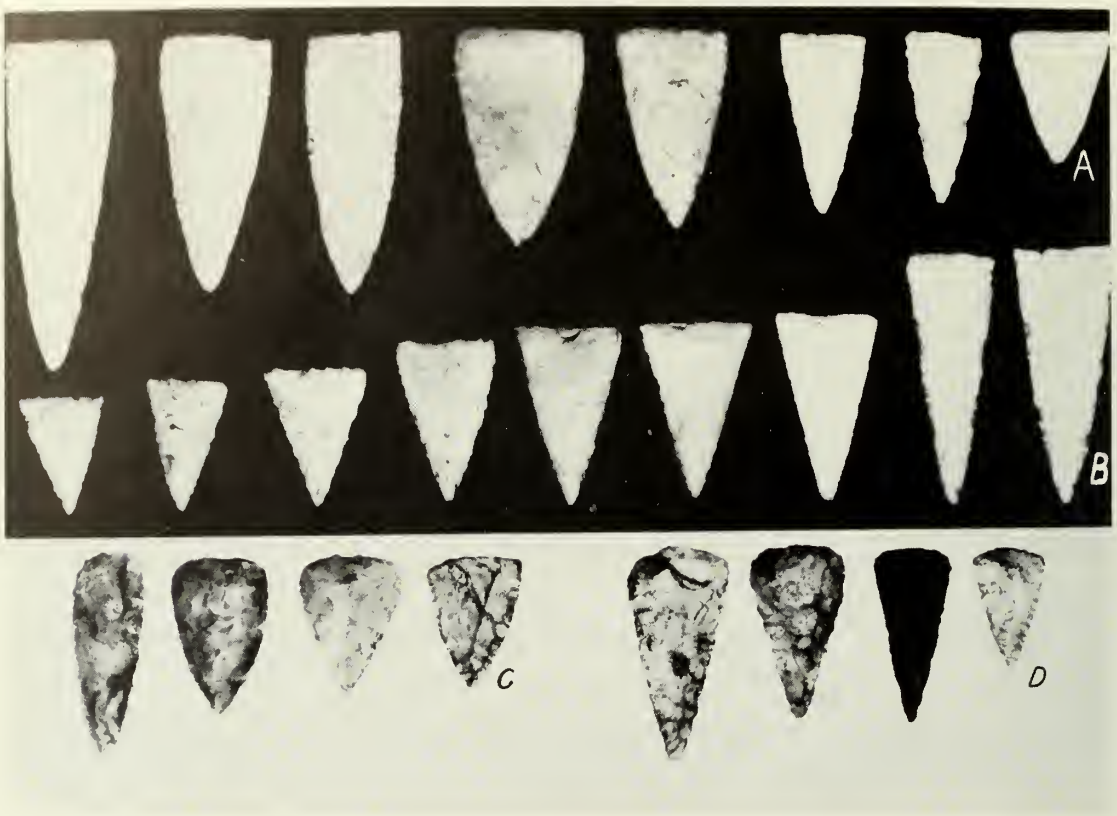

FIG. 7—Unnotched arrowheads: A, straight base, convex sides; B, straight base, straight sides; C, convex base, convex sides; D, convex base, straight sides. Figs. 7-16 inclusive are 7/8 actual size.

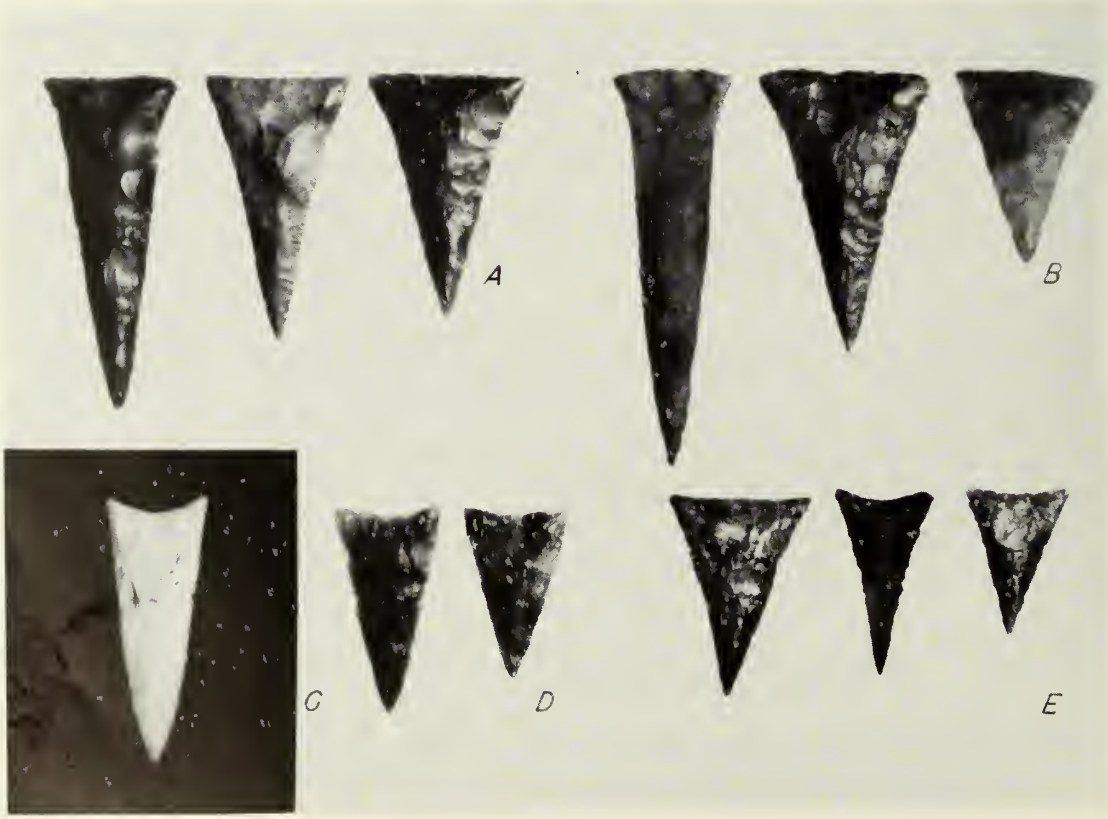

FIG. 8—Unnotched arrowheads: A, straight base, concave sides; B, convex base, concave sides; C, concave base, convex sides; D, concave base, straight sides; E, concave base, concave sides.

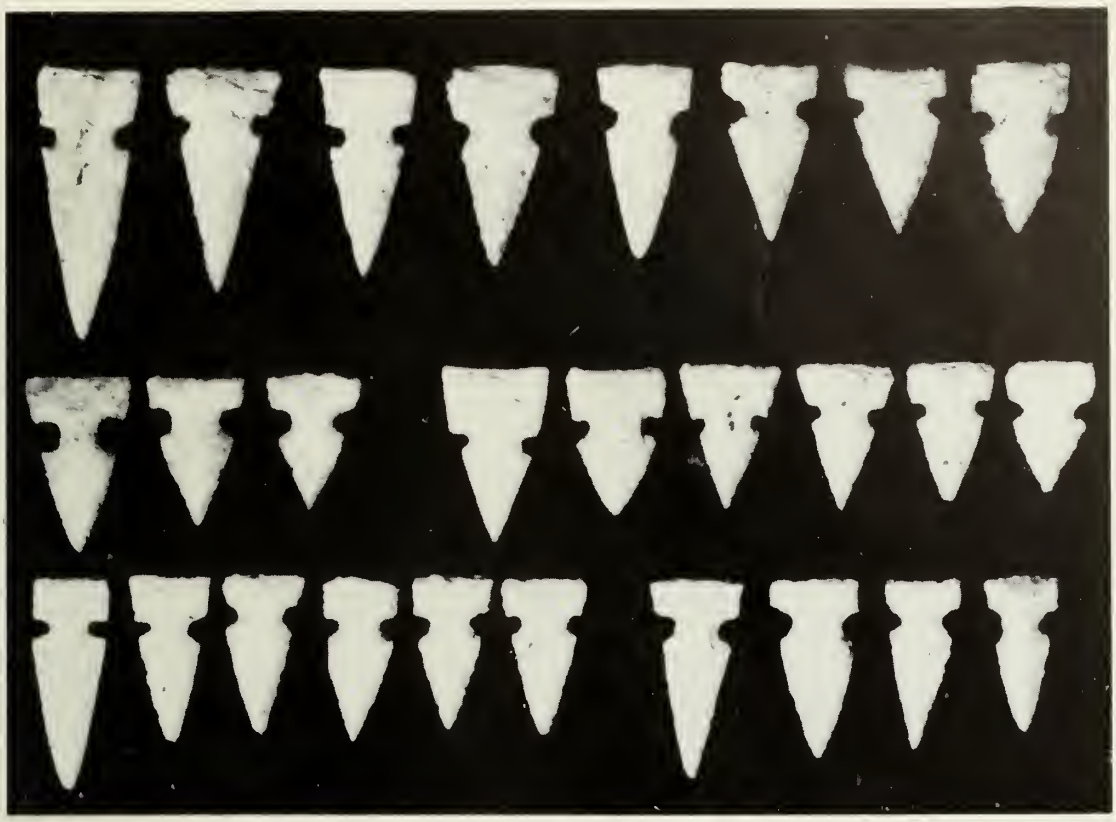

FIG. 9—Two notched arrowheads with straight bases.

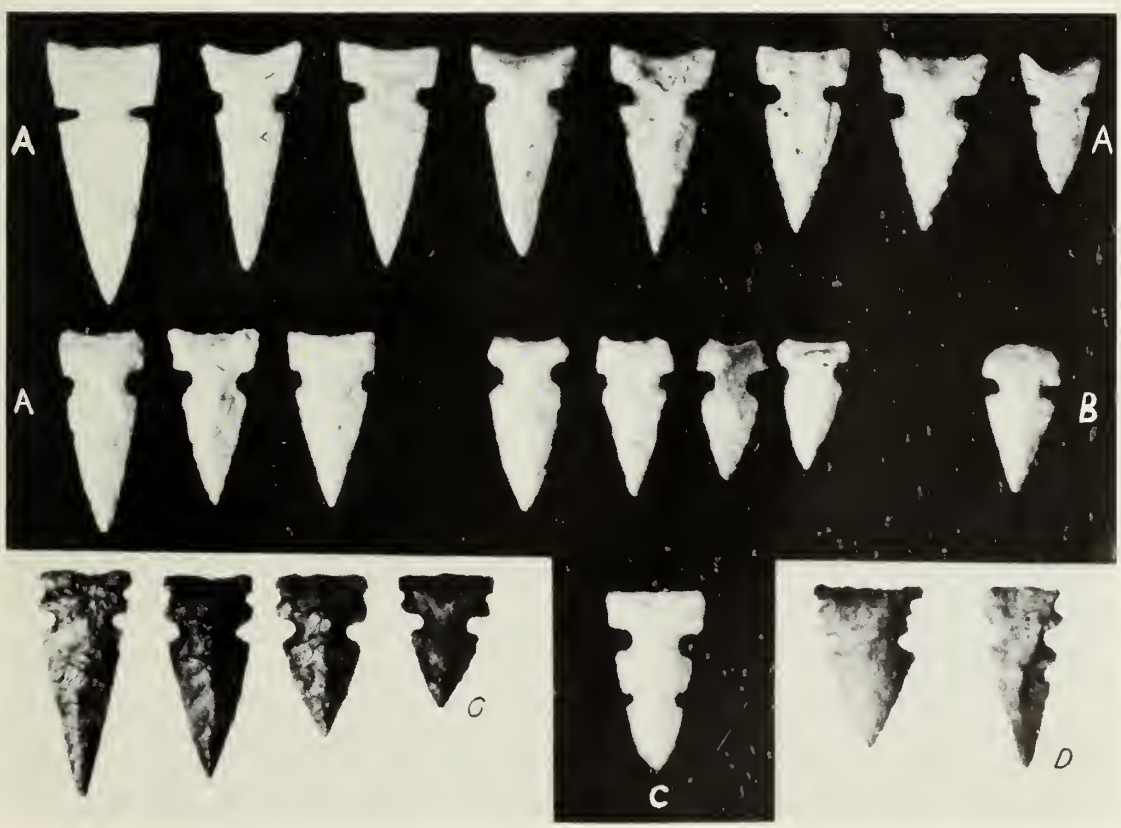

FIG. 10—Notched arrowheads: A, two-notched with concave base; B, two-notched with convex base; C, four-notched; D, six-notched.

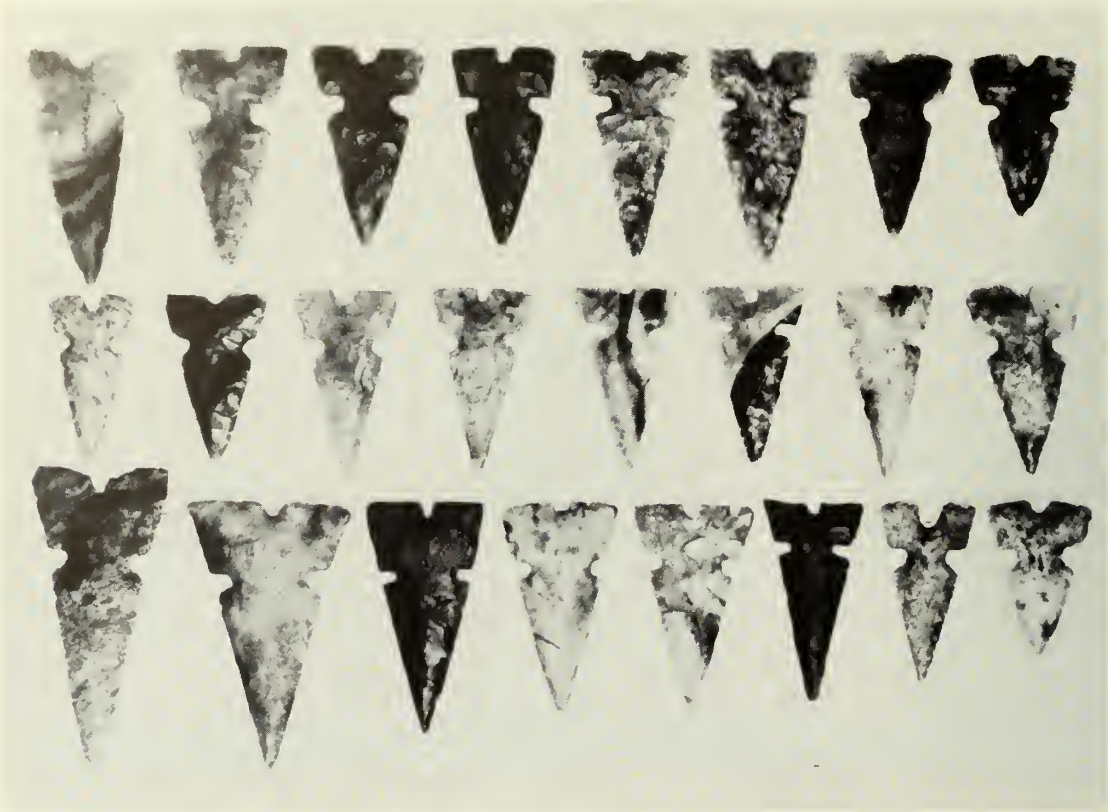

FIG. 11—Three-notched arrowheads: Rows 1 and 2 are made of translucent materials; row 3 is made of colored opaque materials.

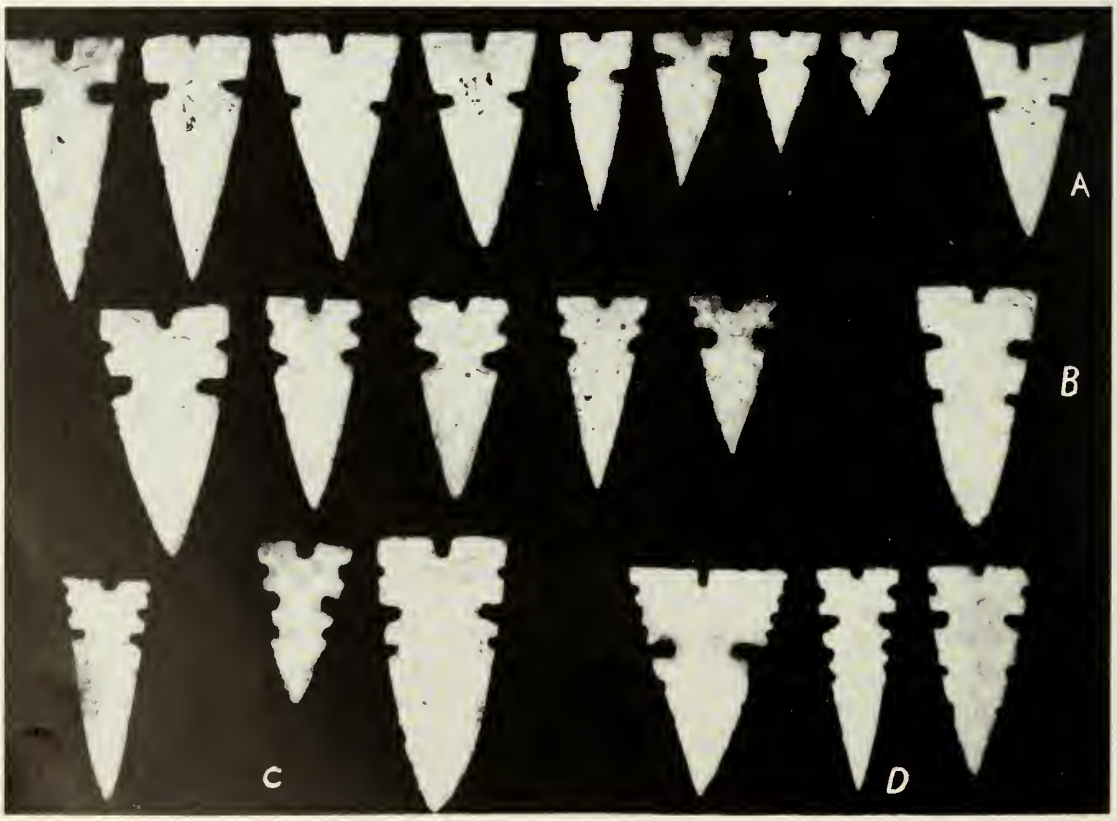

FIG. 12—Notched arrowheads: A, three-notched; B, five-notched; C, seven-notched; D, nine-notched.

FIG. 13—Corner-notched arrowheads.

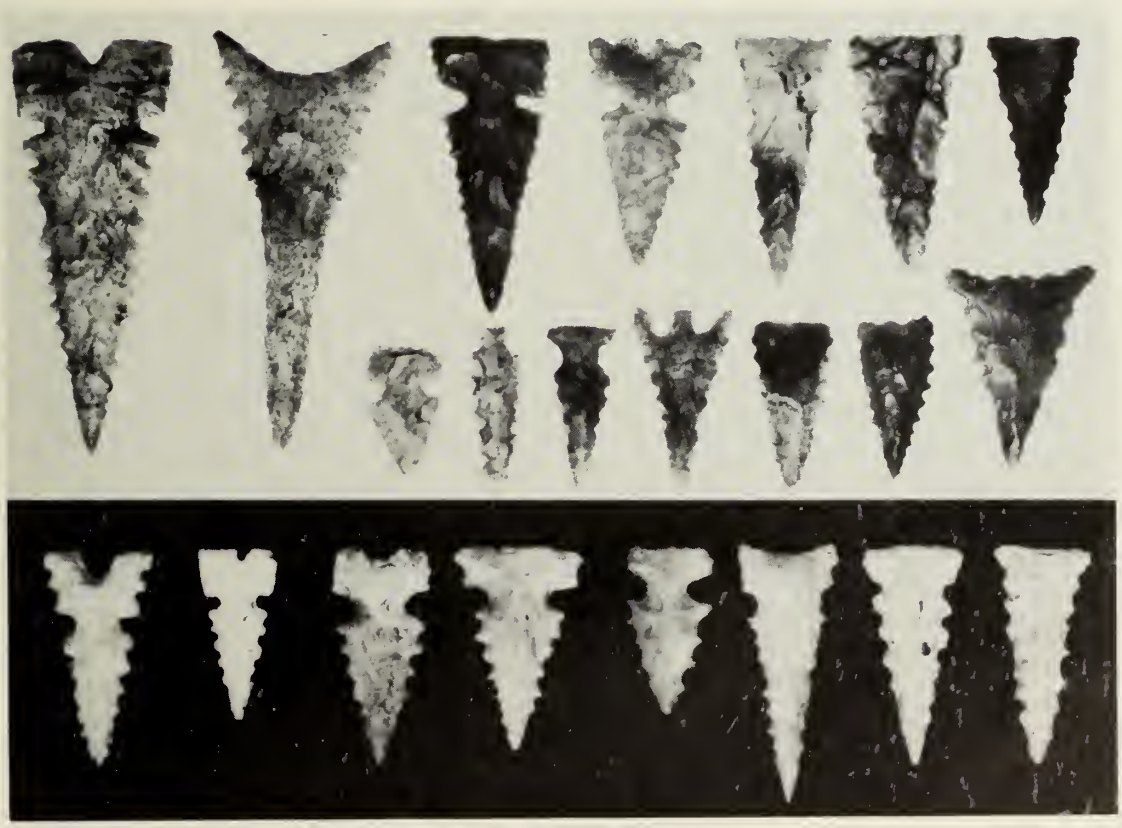

FIG. 14—Serrated arrowheads.

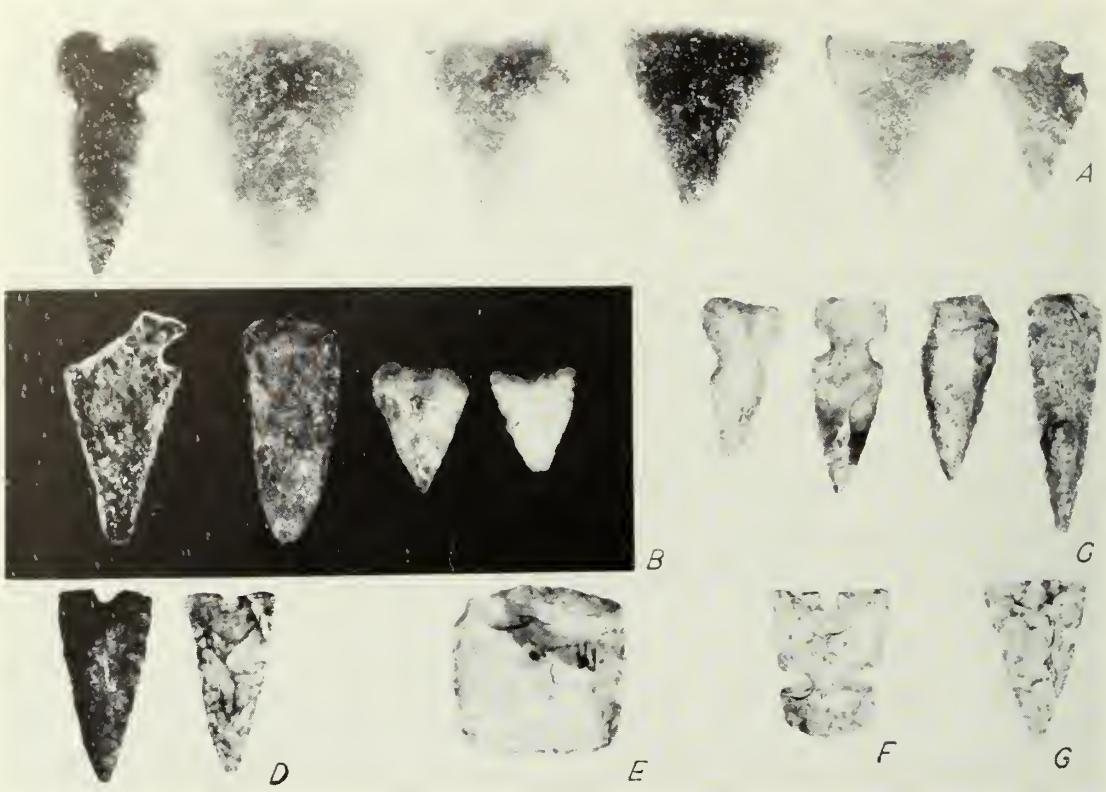

FIG. 15—Arrowheads: A, quartzite; B, quartz; C, arrowheads made from the polished flakes of agricultural implements; D, single-base-notched arrowheads; E, square; F, bunt; G, uncompleted four-notched arrowhead.

FIG. 16—Drills.

FIG. 17—Oval-bitted spades. A and B show no polish on the bit; C, polished bit.

FIG. 18—Flare-bitted spades. All of the bits show polish.

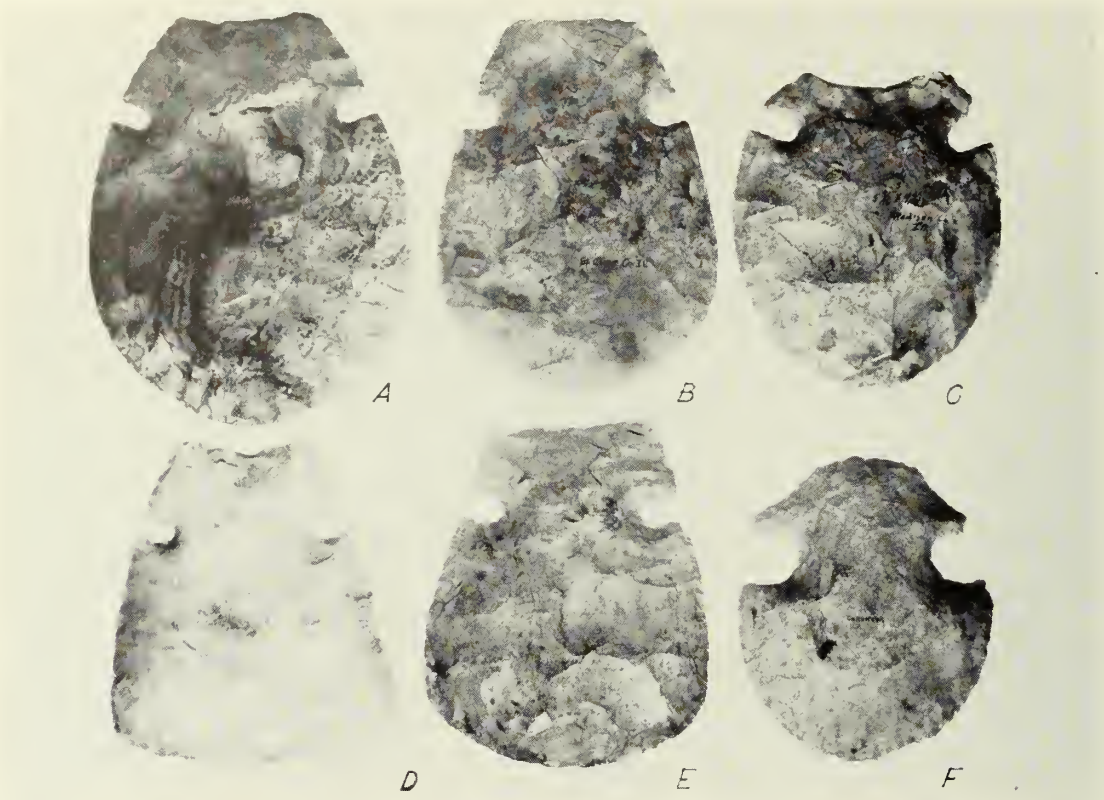

FIG. 19—Notched hoes, oval and flare-bitted.

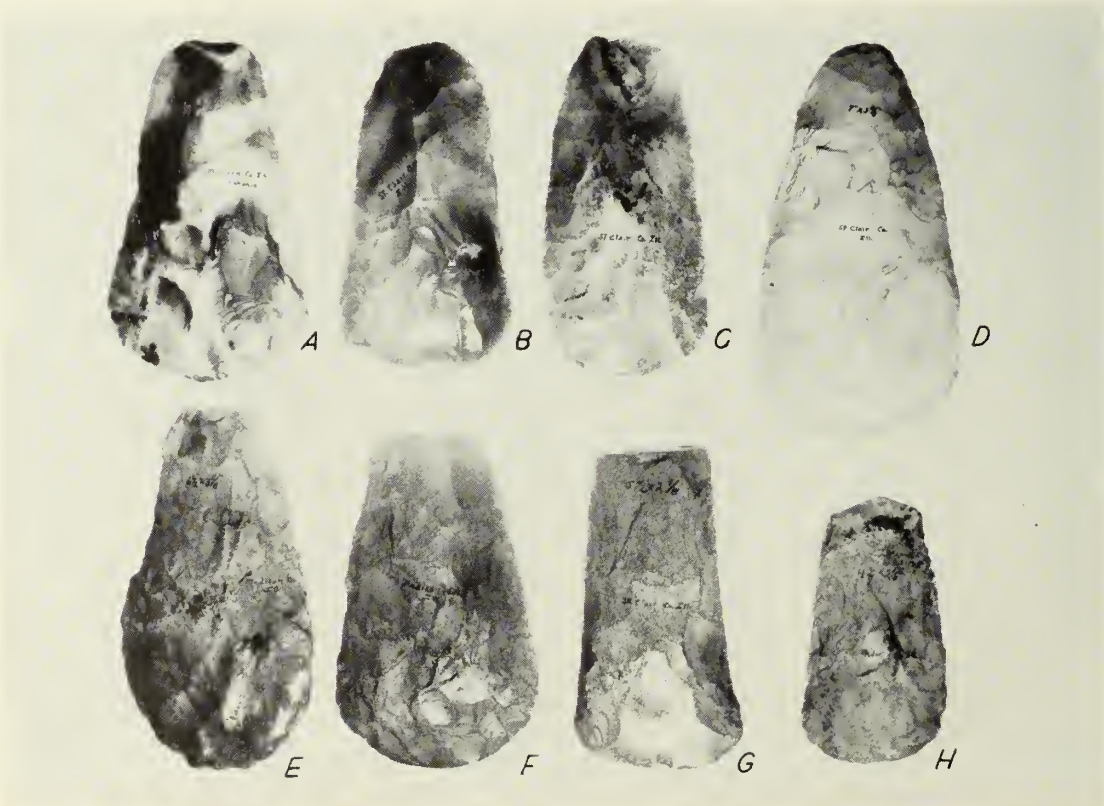

FIG. 20—Unnotched hoes.

FIG. 21—Chisels.

FIG. 22—Picks.

FIG. 23—Spuds: A and B, flare-bitted; C and D, rounded bit.

FIG. 24—Knives.

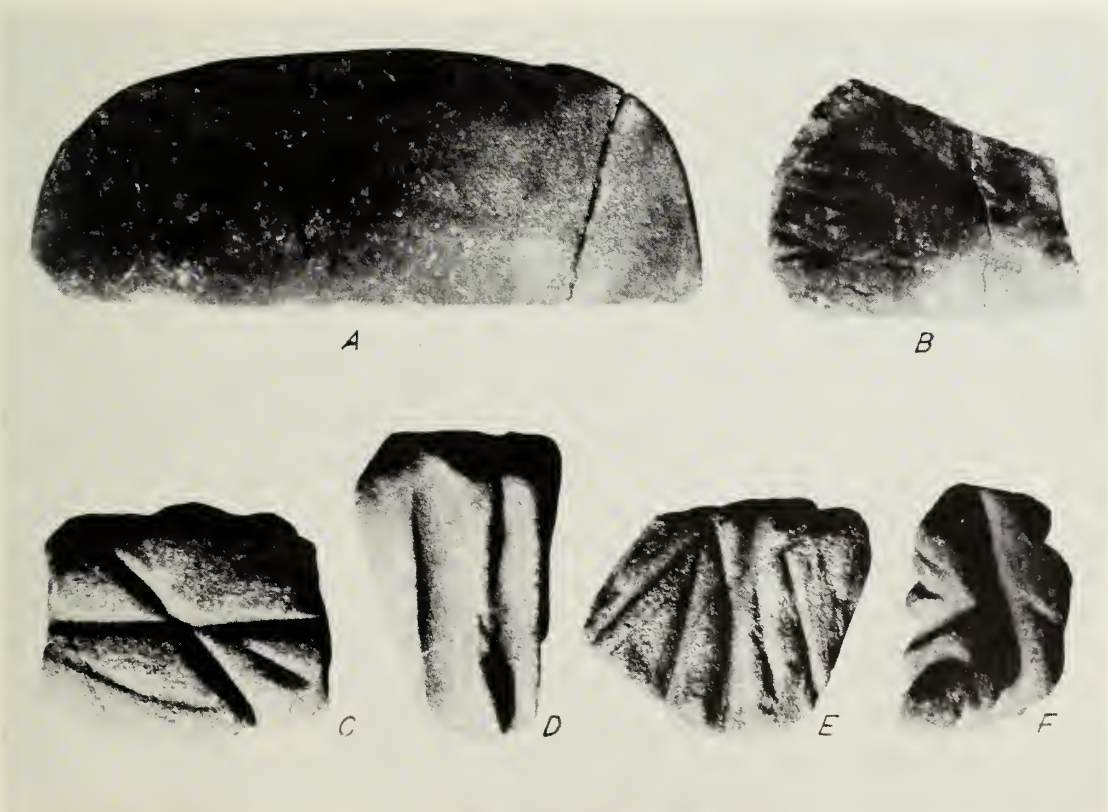

FIG. 25—Sandstone: A and B, saws (?), C to F, sharpening stones.

FIG. 26—Celts: A, unfinished celt; B to H, finished celts.

FIG. 27—Adzes and celt: A to C, adzes; D, celt with round poll.

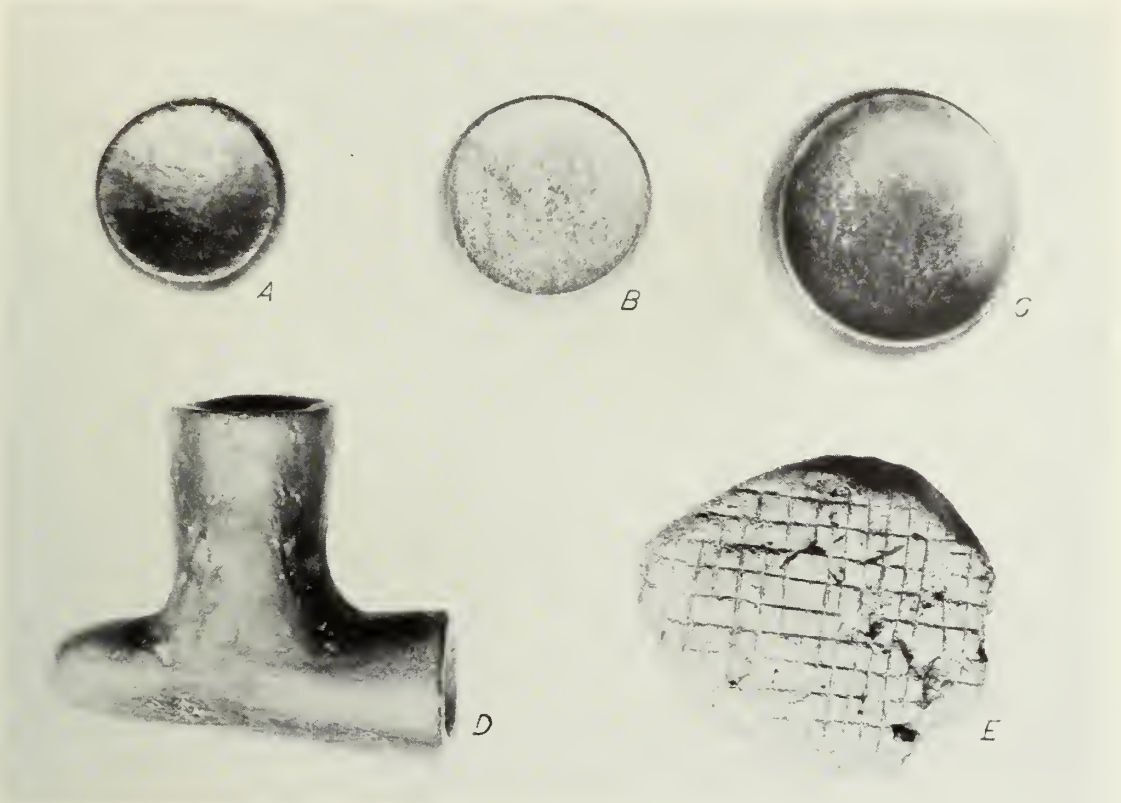

FIG. 28—A to C, discoidals; D, clay pipe; E, cross-hatched tablet.

FIG. 29—A to C, boat stones; D, hematite paint-stone; E, copper celt; F, rolled-copper bead; G, hematite adz; H, galena; J, steatite ear-spool.

FIG. 30—Shell hoes from a refuse pit.

FIG. 31—Unworked mussel shells from a refuse pit.

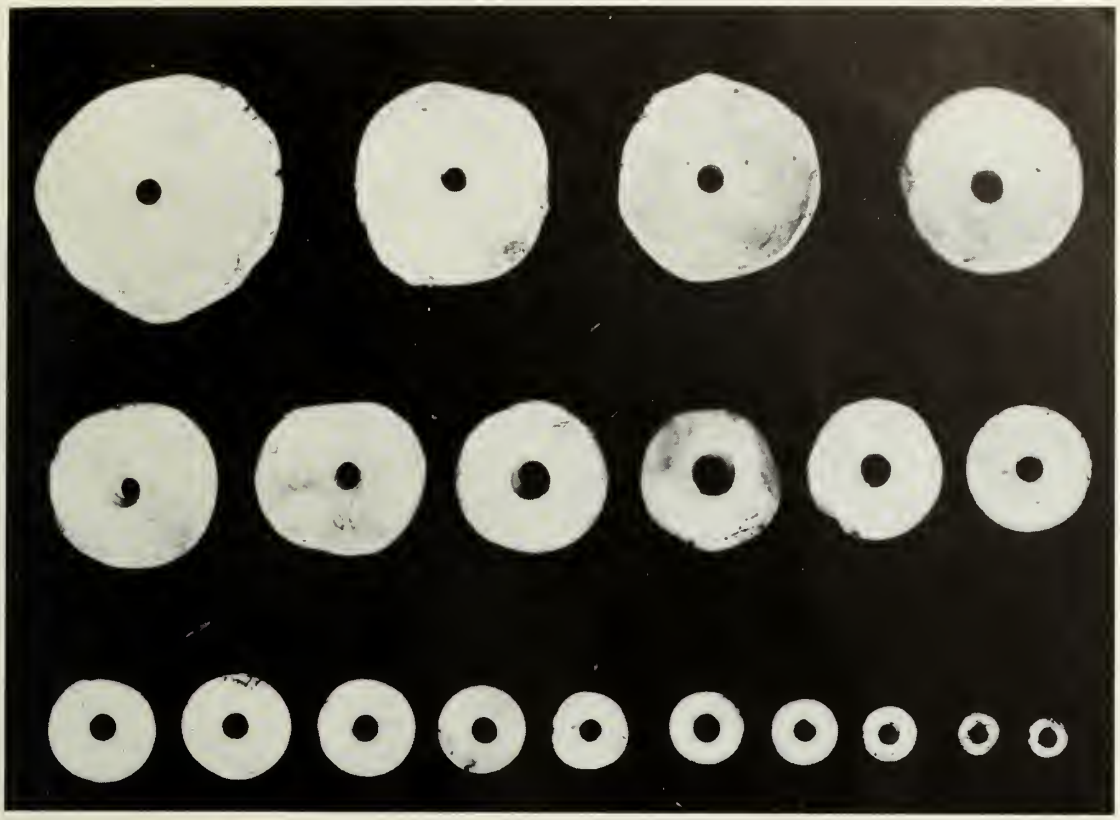

FIG. 32 —Disc shell beads.

FIG. 33 —Disc shell beads made from the shoulder of a conch shell.

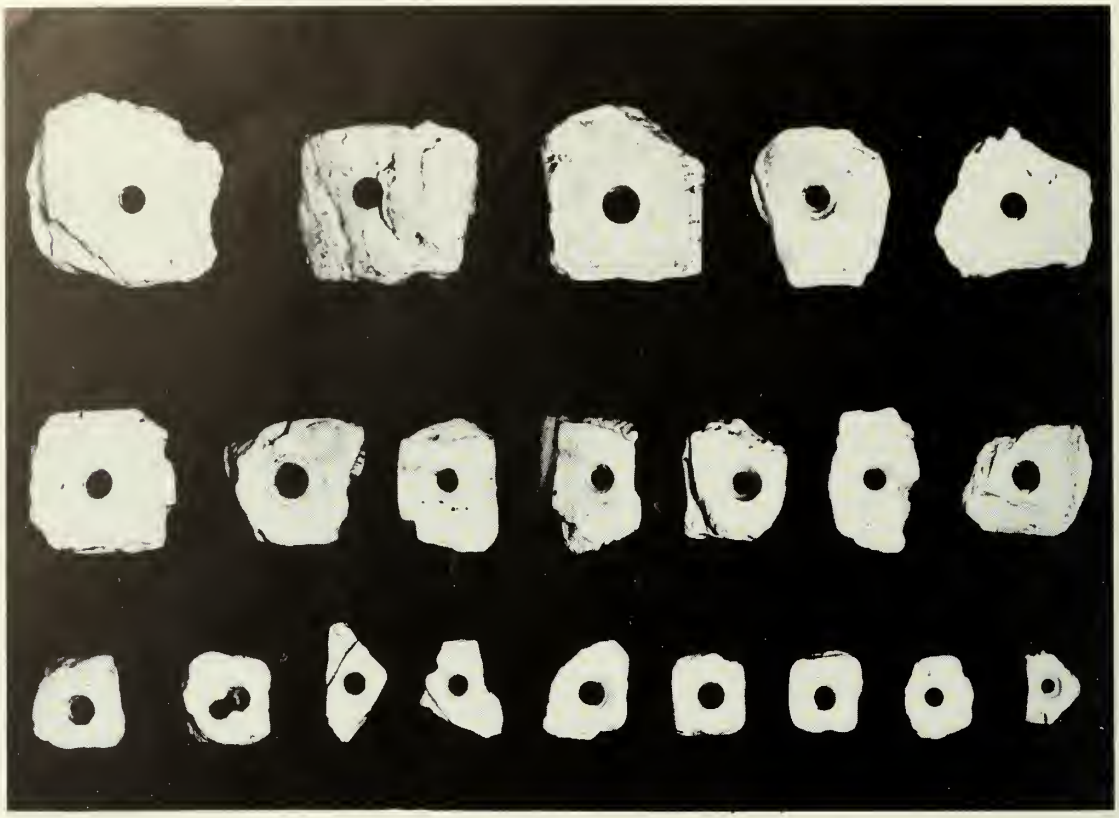

FIG. 34—Unfinished disc shell beads.

FIG. 35—Beads: A, split canine tooth of a bear; B, globular felspar beads; C, pottery owl bead; D, small barrel-shaped shell bead; E, thick disc shell bead; F, globular shell bead; G and H, cylindrical shell beads; J and K, olivella shell beads.

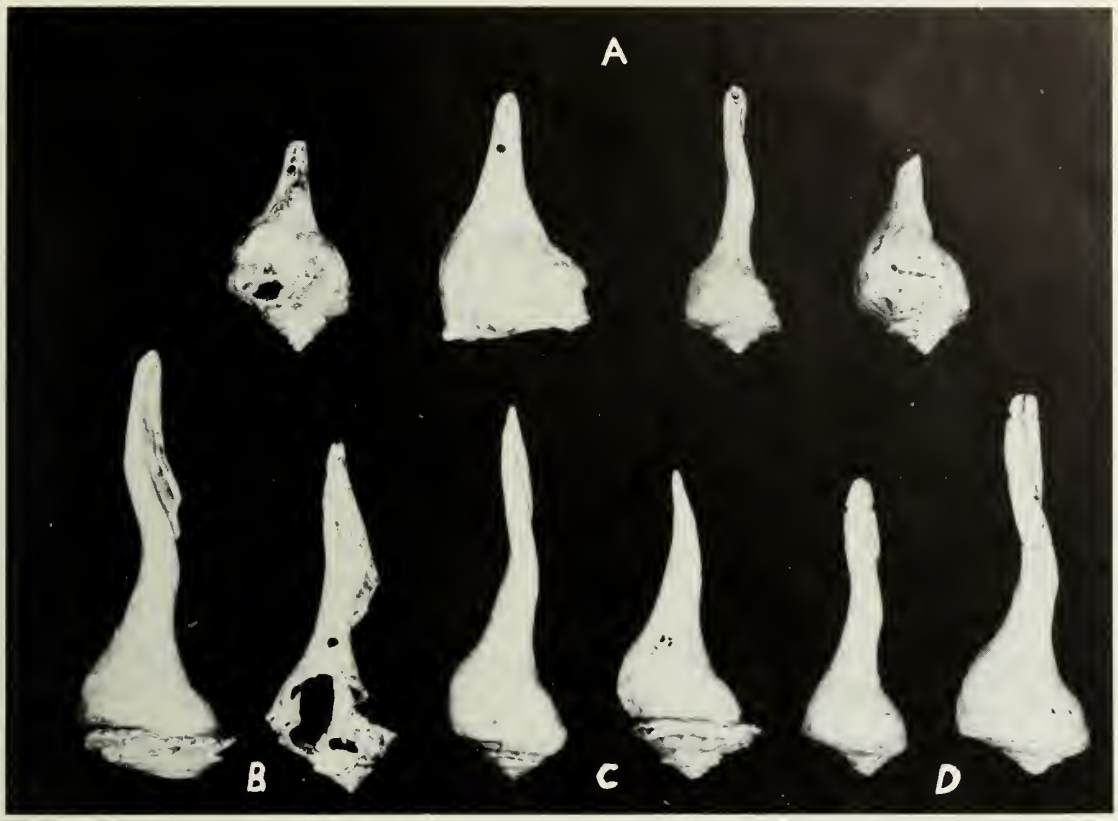

FIG. 36—Conch shells: A, pendants drilled at top for suspension; B, unworked conch shells; C, worked conch shells, neither drilled nor grooved; D, pendants grooved at top for suspension.

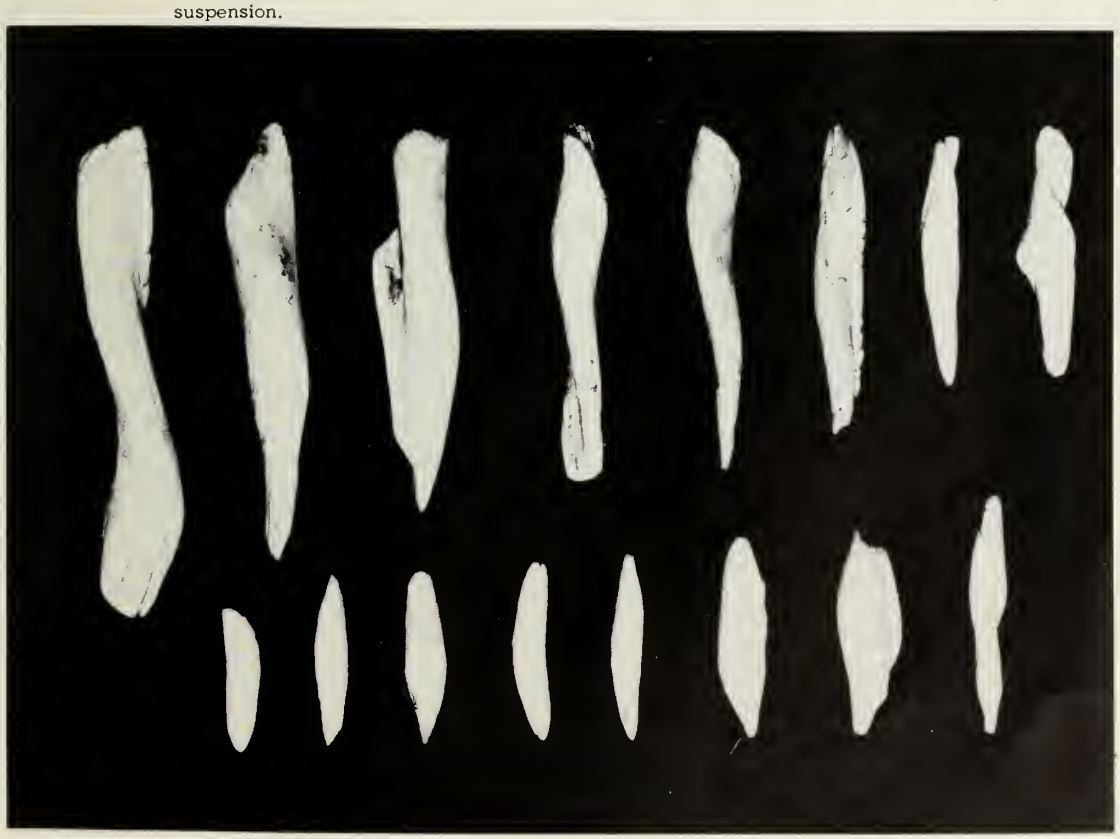

FIG. 37--Columella of the conch shell.

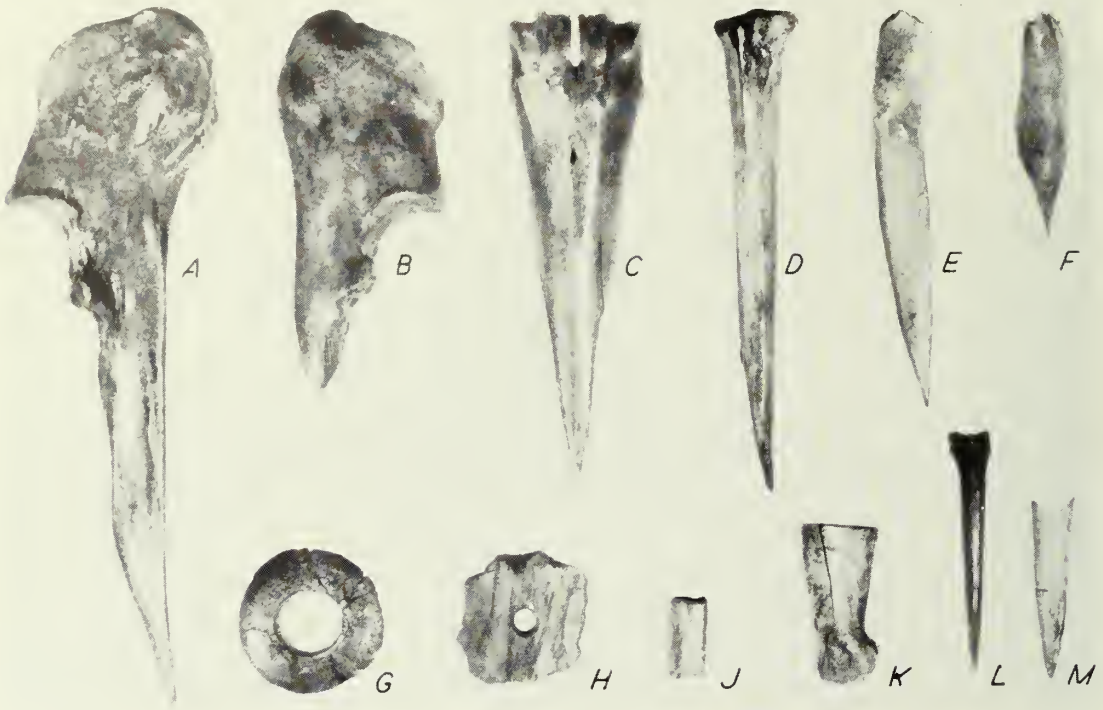

FIG. 38—Bone and antler: A and B, awls from the cannon bone of the deer; C, awl, tibia of the deer; D, awl, leg bone of wild turkey; E and F, split-bone awls; G, bone ear-spool; H and J, bone beads; K, perforated toe bone of the deer; L, perforator from the spine of a fish fin; M, antler-tip arrow point.

FIG. 39—Handled pottery bowl; thin, black ware. Property of, restored and photographed by the Milwaukee Public Museum.

FIG. 40—Cahokia pottery; A to G, the coarser ware; H, the thin, black, polished ware. A and B restored by the Milwaukee Public Museum. G, property of the Missouri Historical Society.

FIG. 41—Pottery handles: A, bird and animal heads; B, "beanpot" handles in the form of the human arm; C, loop handles; D, "beanpot" pointed handles; E, pottery trowel or shaper.

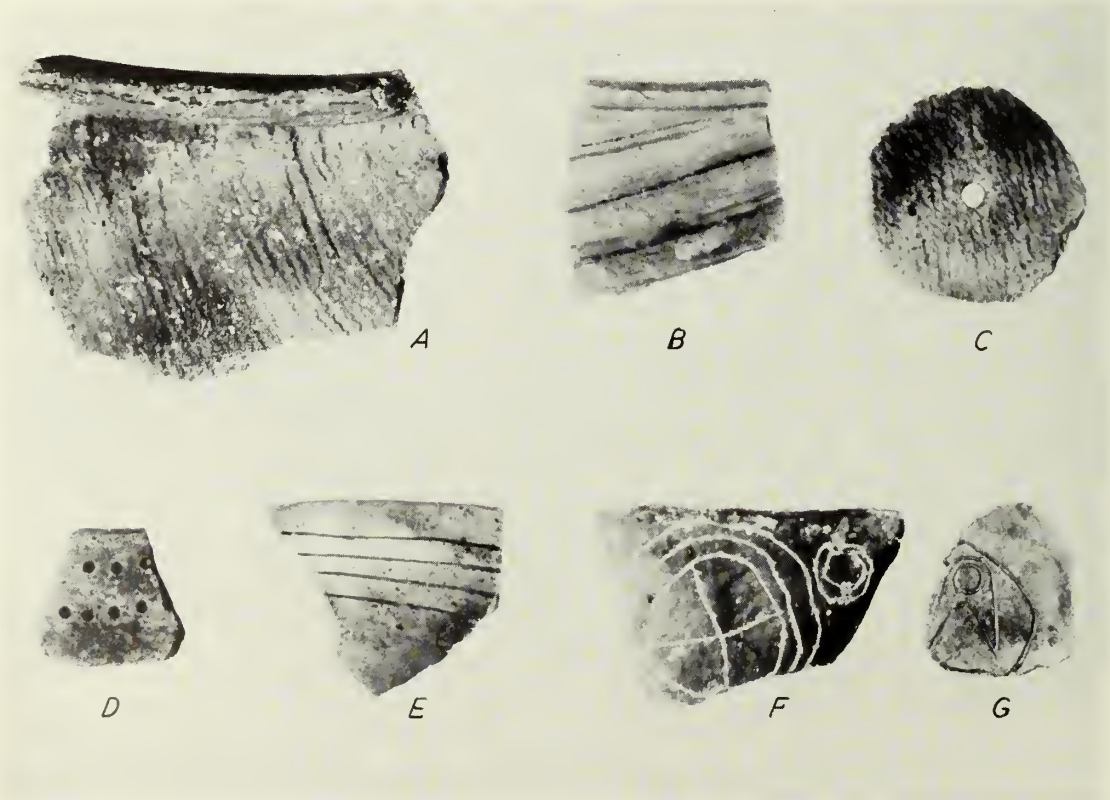

FIG. 42—Potsherds: A, sherd from a pot similar to that shown in Fig. 40, G; B, wide, smooth, linear decoration; C, pottery disc; D, punctate decoration; E to G, incised, fine-line decoration.

FIG. 43—Cahokia pottery; property of and photographed by the University of Illinois. The five central pieces, top row; the three central pieces, middle row; and the two large pieces, bottom row are the thin, black, polished ware of the "Old Village Culture." All of the others are the coarser ware of the "Beanpot Culture."

FIG. 44—Unidentified pottery object.

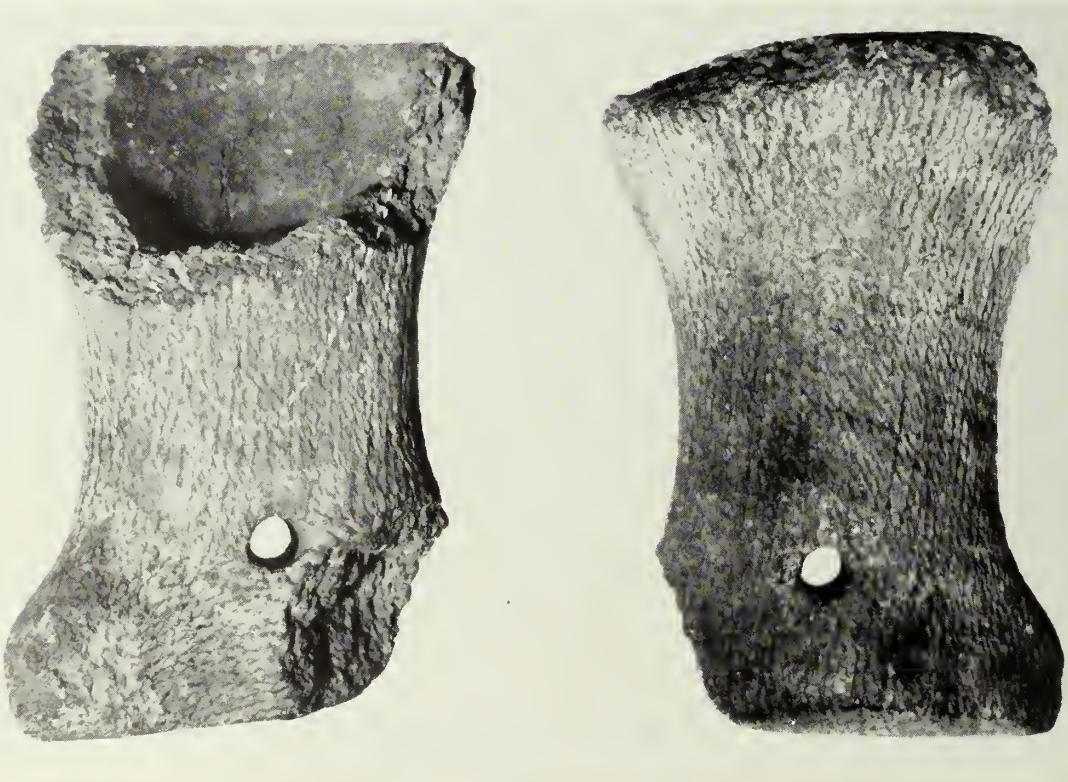

FIG. 45—Unidentified pottery object.

FIG. 46—Powell Mound in 1905; photographed by Mr. J. A. Meyer, St. Louis, Missouri.

FIG. 47—The razing of the Powell Mound. Note the black humus line at the center of the mound and how it dips downward at the left end of the mound. Photograph by the University of Illinois.

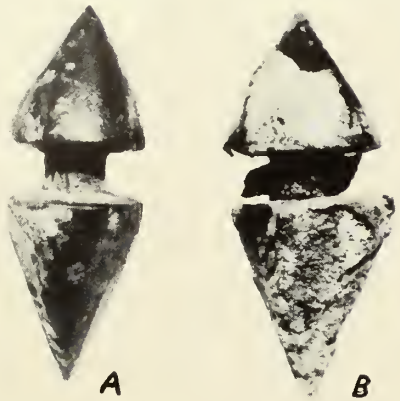

FIG. 48—Spindle-shaped objects from the Powell Mound: A, copper removed; B, copper and leather thong intact. Property of the University of Illinois.

FIG. 49—Reconstructed cross-section of the group burials in the Powell Mound.

FIG. 50—Preservation of a section of the top layer of bark and the top layer of beads as seen from below. Group burial, Powell Mound.

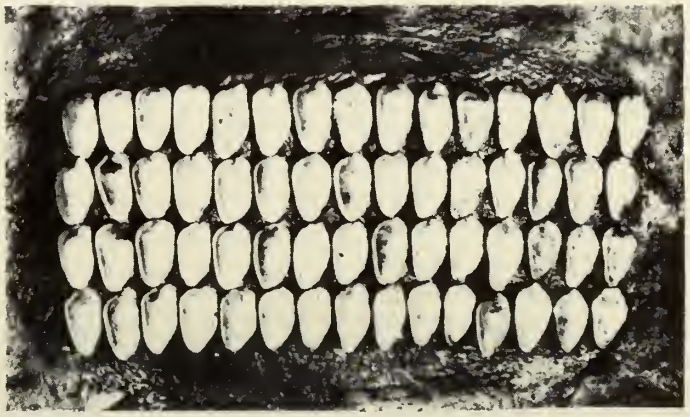

FIG. 51—Reconstruction of a shell layer as seen from above. Group burial, Powell Mound.

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